

Manpower, Personnel, Training Research & Development (MPT R&D) Project Officer's Guide

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The purpose of this Guide is to provide detailed guidance on the Navy's Manpower, Personnel and Training (MPT) Research and Development (R&D) program and project management process and its associated documentation requirements. The Department of the Navy (DoN) *RD&A Management Guide* (NAVSO P-2457) should be consulted to understand the overall DoN Research, Development and Acquisition system. It provides a comprehensive overview of governing instructions and other issuances.

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1. INTRODUCTION AND OVERVIEW

This Guide is intended to be used as a desk reference by all personnel assigned as Project Officers for Navy Manpower, Personnel, and Training (MPT) Research and Development R&D projects. Although the Navy's RD&A Management Guide, 12th Edition, (NAVSO P-2457 (Rev. 2-93)) provides a detailed overview of the Navy's research, development and acquisition process and serves as a ready reference to governing instructions and issuances, this Guide supplements the information contained therein with policy and guidance specific to MPT R&D management. Both documents provide essential information for all personnel involved in the MPT R&D process, whether sponsor, user, supplier, or administrator.

The Guide includes general information on the Department of Defense (DoD) Planning, Programming and Budgeting System (PPBS) and the R&D process as well as detailed guidance for planning and executing category 6.3 Navy-wide MPT R&D. In addition, guidance is provided for planning and executing N1/Bureau of Naval Personnel (BUPERS) 6.5 MPT R&D and 6.6 MPT studies and analyses. Appendices contain formats and content guidance for many of the documents associated with the management of R&D from inception to completion. The remainder of this chapter provides a brief overview of MPT R&D management.

PERS-00H, the Chief of Naval Personnel's (CNP's) Special Assistant for Research Management, is the Program Manager and the Administering Office for Navy-wide 6.3 MPT R&D as well as N1/BUPERS 6.5 and 6.6 MPT R&D. Navy 6.3 MPT R&D currently includes five primary thrust areas:

1. Manpower and Personnel Development
2. Education and Training Development
3. Ship Human Factors Engineering
4. Air Human Factors Engineering
5. Simulation and Training Devices

The role of PERS-00H in MPT R&D manage-

ment is of an "oversight" nature and extends across all the above mission/thrust areas. Table 1.1 summarizes PERS-00H's primary R&D

Table 1.1. PERS-00H R&D management functions

Functions
<ul style="list-style-type: none">• Develop and maintain MPT R&D policy and• Task/Coordinate program development• Perform fiscal administration• Ensure MPT technology basis and 6.3 "fit"• Balance "Technology Push" with "Require-• Oversee laboratory performance• Oversee R&D transition/implementation• Defend program in Office of Naval Research (ONR), Financial Management and Budget (FMB), Office of the Secretary of Defense• Maintain program documentation• Coordinate with DoD Reliance through the Armed Services Training and Personnel Systems Science and Technology Evaluation

management functions.

PERS-00H allocates funding and both facilitates and provides oversight for the MPT R&D process — from requirements determination and prioritization through execution and transition/implementation. Throughout this process, PERS-00H serves as an "honest broker" to all sponsors. The interests of the various Office of the Chief of Naval Operations (OPNAV) codes (i.e., N1, N6, N7, N8) are accommodated through ongoing interactions and participation in an annual program review of the 6.3 MPT R&D program. A major responsibility of PERS-00H is to ensure that all projects remain in compliance with 6.3 (Advanced Technology Demonstration) R&D standards throughout the research process.

Category 6.3 research is managed as a requirements-driven process. That is, advanced technology is applied only against validated requirements. A requirement should be based upon analyses which indicate a significant deficiency in existing

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capabilities or an opportunity to establish new capabilities. It is incumbent upon project sponsors to ensure (validate) that submitted research requirements reflect their highest priorities and are consistent with long-term organizational plans. Moreover, implicit within the required flag-level sponsor's endorsement of a research requirement is a commitment to coordinate functional area oversight of research efforts and to secure funding for the transition and implementation of successful research products.

Three principal measures of success in the 6.3 arena are: (1) risk-reduction (demonstrated technology application), (2) cost-effectiveness (leverage or return on the R&D dollar), and (3) transition to the operational world (solving mission-related problems). 6.3 research couples *technology push* with *requirements pull*. Technology push refers to the motivation of the R&D community to explore the feasibility-edge of technological capabilities; requirements pull refers to solving those problems which constrain operational capabilities.

Throughout the life of a research effort it is the responsibility of the performing lab to focus on the research task and to remain responsive to the requirement. It is the responsibility of the Project Sponsors to address the issues of requirements validation, coordination with operational systems, and transition/implementation. These interdependent responsibilities are coordinated by the Project Officer (appointed by Project Sponsor) and the establishment of an Implementation Planning Group.

Once initiated, projects do not take on a life of their own. They can be terminated for the following reasons:

- the requirement is no longer valid
- Technical Development Plan (TDP) milestones are consistently not being met
- research products are not meeting user needs
- if after one year:
 - there is no Implementation Planning Group

- there is no Evaluation and Implementation
- transition (exit) criteria are met (i.e., implementation plan objectives are achieved).

2. PLANNING, PROGRAMMING AND BUDGETING SYSTEM BASICS

This chapter provides an overview of the DoD Planning, Programming, and Budgeting System (PPBS) — basic concepts, key players, and phases associated with the PPBS are defined. An awareness and introductory-level knowledge of PPBS will provide a foundation for understanding cyclical events in the development of the Navy's R&D program. Although a Project Officer may not be intimately or directly involved in this process, there may be occasion to input into the system when programming for the transition/implementation of research products.

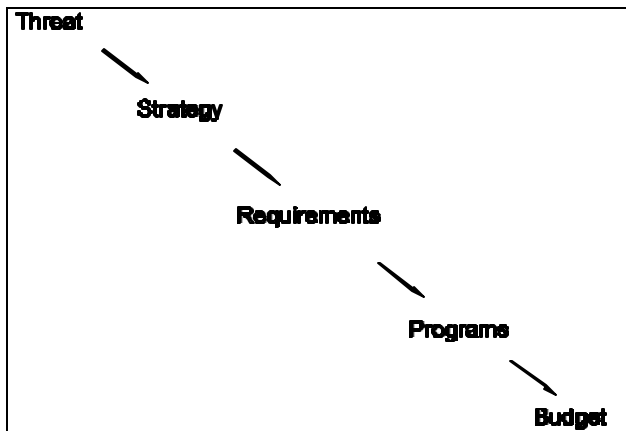


Figure 2.1 PPBS sequence of events

PPBS is essentially a decision-making process for allocating defense resources. It serves to translate force requirements developed by the military in the Joint Strategic Planning Document (JSPD) into budgetary requirements which are then presented to Congress. This process takes almost two years and involves four major players at the Washington, D. C. level (i.e., Office of Management and Budget or OMB, Office of the Secretary of Defense or OSD, Joint Chiefs of Staff or JCS, and the Services) who, through an iterative process, move from broad planning considerations to more definitive program objectives, and finally to specific budget estimates which price out the programs.

PPBS differs from a traditional budgeting process in two significant ways. First, rather than focusing on the existing base and annual incre-

mental improvements to it, PPBS focuses more on objectives and purposes, and the long-term alternative means for achieving them. Secondly, the system brings together planning and budgeting by means of programming, a process through which plans are converted into time-phased and fiscally-oriented programs.

The PPBS process, shown in Figure 1.1, can be summarized conceptually as follows: Based on the anticipated *Threat* to American interests, a *Strategy* is developed. The *Requirements* of the strategy are then estimated and *Programs* are developed to package and execute the strategy. Finally, the costs of approved programs are *Budgeted*.

2.1 APPROPRIATIONS AND PROGRAMS

2.1.1 Appropriations. Funding is approved by Congress in the form of appropriations. By definition, an appropriation is a statute that provides budget authority for federal agencies to incur obligations and make payments out of the Treasury for specified purposes. As shown in Figure 2.2, appropriations are categorized by purpose: Operations and Maintenance, Military Personnel, Procurement, R&D, Military Construction, Family Housing and Others.

An understanding of several key terms and concepts is essential for the proper use of appro-

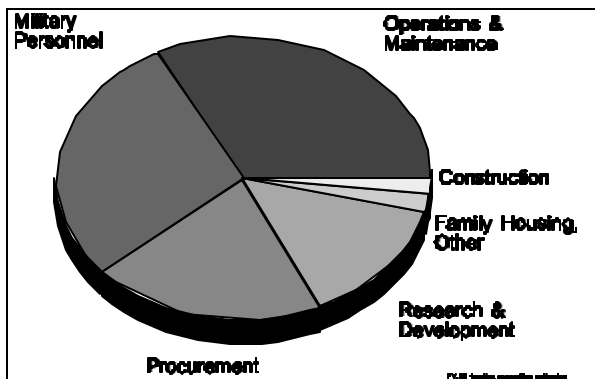


Figure 2.2 Types of Congressional military appropriations

riated funds.

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2.1.1.1 Fiscal Year (FY). The fiscal year is a government accounting period that begins on 1 October and ends on 30 September of the following year. It is designated by the calendar year in which it ends (e.g., the fiscal year 1997 is the year beginning October 1, 1996 and ending September 30, 1997).

2.1.1.2 Commitment. A commitment is an *administrative* reservation of funds which authorizes the recipient to create obligations (see section 2.1.1.3) without further recourse to the official responsible for certifying the availability of funds. The act of entering into a commitment is usually the first step in the process of spending available funds. The effect of entering into a commitment and the recording of that commitment on the records of the allotment is to reserve funds for future obligations. A commitment is subject to cancellation by the approving authority if it is not already obligated. Commitments are a prelude to the establishment of an obligation.

2.1.1.3 Obligation. An obligation is a *legal* reservation of funds — a duty to make a future payment. The duty is incurred as soon as an order is placed, or a contract is awarded for the delivery of goods and the performance of services. It is not necessary that goods actually be delivered or that services actually be performed before the obligation is created; neither is it necessary that a bill, or invoice, be received first — the placement of an order is sufficient. An obligation legally encumbers a specified sum of money which will require outlay(s) or expenditure(s) in the future.

2.1.1.4 Expenditure. The term “expenditure” is used to describe the satisfaction of an obligation either through the transfer of funds or the disbursement of funds from the U.S. Treasury.

2.1.1.5 Obligational Availability Period. Appropriations have a specific Obligational Availability Period or duration which specifies how long an appropriation is available for incurring obligations. Some appropriations are incrementally funded on an

annual basis; others are fully funded (e.g., dollars are appropriated to fully construct a specific number of ships). Table 2.1 lists selected appropriations, their associated obligational availability periods and funding increments.

Table 2.1 Selected Appropriations and Obligational Availability Periods

Appropriation	Obligation Period	Increment
Operations & Maintenance Military Pay	1 year	A N N U A L
Research	2 years	
Procurement	3 years	F U L L Y F U N D E D
Shipbuilding Construction	5 years	

Annual (one year) appropriations are available for incurring obligations only during the fiscal year specified in the Appropriation Act. Multiple year appropriations are available for incurring obligations for a definite period in excess of one fiscal year. Although the R&D appropriation is legally available for obligation for two fiscal years, the objective is to use these funds during the initial year of availability. If the budget could be executed precisely in accordance with the formulation plan, all funds would be obligated by the end of the first fiscal year and the major portion would have been disbursed. On occasion, because of late appropriations, fund deferrals, significant technical difficulties, protracted negotiations, and other reasons at either the administering office or the performing activity, it may not be possible to execute a project as programmed and budgeted. Hence, the 2-year obligation availability of the R&D appropriation provides for flexibility.

2.1.2 Programs. Traditional budgeting is concerned with the input of resources (e.g., appropriations) while program budgeting is concerned with the output of programs. The Program Budget sets forth what accomplishments can be expected from the resources available. Table 2.2 lists the eleven programs which currently identify broad areas of both mission and support. Programs 1, 2, 4, 5 and 11 are considered as force related (force mission) while Programs 3, 6, 7, 8 and 9 are considered as support programs. Program 10 essentially stands by itself. Note that Program 6 consists of all R&D of systems not yet approved for operational use. R&D of systems approved for operational use is included in the relevant major force program.

Table 2.2 PPBS Programs

Program	Focus
1	Strategic Forces (F)
2	General Purpose Forces (F)
3	Intelligence and Communications (S)
4	Airlift and Sealift (F)
5	Guard and Reserve Forces (F)
6	Research and Development (S)
7	Central Supply and Maintenance (S)
8	Training, Medical, and Other General Personnel Activities (S)
9	Administration and Associated Activities (S)
10	Support of Other Nations (S)
11	Special Operations Forces (F)
	(F) = Force Mission; (S) = Support Programs

2.1.3 Program Elements. The building block of the Program Budget is the Program Element (PE). It is the smallest part of military resources that is controlled at the DoD level. A PE is a grouping of forces, manpower and costs associated with an organization, a group of similar organizations, a function or a project. The PEs may be aggregated to display the total resources assigned to a specific program; they may be aggregated to families of weapons or support systems within a program; or they may be aggregated to select only identified resources, such as operating costs.

During the PPBS process, plans are translated into programs, changes in PEs are identified and new ones are created. Each PE has a Program Sponsor who is responsible for coordinating the development of proposed program changes, and a Resource Sponsor who reviews and defends the PE during PPBS.

2.2 PPBS KEY PLAYERS

2.2.1 Deputy Chief of Naval Operations (DCNO) N3/N5 (Plans, Policy and Operations). N3/N5 is the key player in the Planning phase of PPBS.

2.2.2 DCNO N8 (Resources, Warfare Requirements and Assessment). N8 is the key player in the Programming and Budgeting phases of PPBS. The Chief of Naval Operations (CNO) relies on N8 to assess, develop, and control the Navy's Six Year Defense Program (SYDP or FYDP, Future Year Defense Program). Three subordinate offices in N8 are key to programming and budgeting:

1.The Programming Division (N80) develops programs which are to be executed two to seven years in the future. N80 issues POM guidance, defends the POM, and appraises resource sponsor proposals for new or revised programs.

2.The Assessment Division (N81) does long-range planning. Using operations research techniques, this division assesses programs and develops long-range financial plans.

3.The Fiscal Division (N82), among other things: (a) develops, reviews, and executes the Navy (b) budget; (b) translates program requirements into appropriation requirements; (c) reports program requirements into appropriation requirements, (d) reports the results of execution to the DoD comptroller, (e) requests allocations for Financial Management and Budget (FMB); and (f) justifies the budget request to the DoD comptroller.

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2.2.3 Appropriation Sponsors. Appropriation Sponsors are charged with supervisory control over appropriations. During PPBS, Appropriation Sponsors ensure that the programs submitted are properly structured, priced, supported, and balanced within fiscal controls. They advise Resource Sponsors and N80 on the feasibility of programs and provide recommendations based upon their knowledge of the budget review process. They also testify before Congress. During budget execution, Appropriation Sponsors recommend the reprogramming of funds within their appropriations.

The Director of Test, Evaluation and Technology Requirements (N091) is the Appropriation Sponsor for Navy 6.3 R&D.

2.2.4 Program Sponsors for Navy R&D. Navy R&D Program Sponsors determine the objectives, time-phasing and support requirements for their programs. In addition, they appraise their programs' progress and readiness, and determine the military worth of weapon systems and program capabilities. N1/BUPERS is the Program Sponsor for Navy-wide 6.3 MPT R&D.

2.2.5 Resource Sponsors. A Resource Sponsor is responsible for an identifiable collection of resources and their contribution towards Navy programs. During PPBS, it is the Resource Sponsor who submits requests for changes in programs, considering the needs expressed by the staff who implement the programs (claimants) and the guidance from N80. In liaison with Program and Appropriation Sponsors, Resource Sponsors develop program appraisals for their respective programs and are responsible for ensuring that their programs are effective, balanced and operated within assigned fiscal controls. Selected Resource Sponsors are listed in Table 2.3.

2.2.6 Assessment Sponsors. Assessment Sponsors have three basic tasks: (a) to identify the long- and short-term programming issues necessary to maintain current fleet readiness and ensure future force capabilities; (b) to determine the baseline from which assessments are made; and (c) to monitor program development as recorded in the Program Objectives Memorandum (POM; see section 2.3.2).

N091 is the Assessment Sponsor for Research, Development and Acquisition.

2.3 PPBS PHASES

Table 2.3 Selected Resource Sponsors

Resource	Sponsor
<u>Platform</u>	
- Surface	N86
- Submarine	N87
- Aviation	N88
<u>Support</u>	
- Manpower & Personnel (e.g., 6.5, 6.6	N1
- Training	N7
- RDT&E (e.g., 6.3 MPT R&D)	N091
- Medical	N093
- Space and Electronic Warfare	N6
- Plans, Policy/Operations	N3/N5

2.3.1 PPBS Planning Phase. Planning, the first phase of the PPBS, starts with the assessment of the threat to the security of the United States and, when combined with national policy, culminates in the development of force objectives to assure the security of the nation. The major steps in Navy planning are:

1. Assess the current situation
2. Determine military strategy and force levels
3. Develop force planning guidance

Once developed, the draft Defense Planning Guidance (DG) is presented to the Secretary of Defense (SECDEF) and to the Commanders-in-Chief (CINCs) of the unified commands. The CINCs have an opportunity to comment on the draft DG and personally meet with the SECDEF to discuss their views and recommendations.

After considering their advice, the SECDEF makes the needed changes and signs the document. The signed DG becomes the final product of the planning phase and the basis for the programming phase.

The Maritime Strategy, also developed during the planning phase, is the Navy's war fighting strategy. It is used by the Navy when developing program objectives during the programming phase and by Congress during their budget review.

Table 2.4 POM 98-99

<u>96</u>	<u>97</u>	<u>98</u>	<u>99</u>	<u>00</u>	<u>01</u>	<u>02</u>	<u>03</u>
PY	CY	BY	BY+1	Next 4 years			
PY: Prior year		CY: Current year		BY: Budget year			

2.3.2 PPBS Programming Phase. In DoD, programming is the process by which information in the Defense Planning Guidance is translated into a financial plan of effective and achievable programs. Programming takes approximately two years to complete for each budget submitted.

During Programming, Navy commands and activities work within a total dollar financial constraint known as Total Obligational Authority (TOA). This is the amount of funds available to the Navy in a given fiscal year.

The Programming phase results in the development of a document called the Program Objectives Memorandum, or POM. The POM contains information on the Navy programs planned for a six year period. It covers the objectives, planned activities and cost of each program. The first two years of the POM will later be changed into the budget that is submitted to Congress.

During the programming phase, information on current and proposed programs is compiled in the POM and reviewed thoroughly. Part of this review is an assessment of risks and an evaluation of the military advantages and disadvantages of each alternative that has been proposed to meet the risk.

Commands and field activities update their program plans to reflect changing international and national situations, OSD guidance, and technological developments. The Navy programs are often rebalanced, or changed. The POM has fiscal constraints, but sponsors can rebalance programs

within the total available resources to create a more balanced program.

The POM highlights the first two years of the six years of new data it contains. For example, the information in POM 98-99 (referred to as POM 98) will be used as the basis for the 98-99 budget. (See Table 2.4.) Also shown in POM 98-99 are the prior and current budget years (96-97) and the next four years (00, 01, 02, and 03).

The Programming Phase is completed when the SECDEF issues a Program Decision Memorandum (PDM) for each military department and defense agency. The document is arranged by Major Mission and Support Categories and serves as the basis for the upcoming budget submission.

2.3.2.1 POM Serial. The POM Serial is a series of memos from N80 to all offices participating in the development of the POM. It contains detailed instructions on how to complete the Programming phase.

The Programming phase begins with the issuance of the first POM Serial. The first POM Serial provides structure and guidance for the POM development process. It assigns responsibilities to various offices and gives instructions and a schedule for the phase, beginning with program planning. POM Serials are issued throughout the programming phase as situations change. Each one is numbered consecutively so that everyone knows which information is the most current.

2.3.2.2 POM Issue Papers. Claimants and component commanders can provide input to the programming process by submitting POM Issue Papers (or during odd years, Program Review Issue Papers) to their Resource Sponsors for consideration. In POM Issue Papers, they may generally document three to five issues, or requests for changes in programs. For each issue, they indicate the priority of the issue and the offsets from lower priority programs and/or economies (cost savings) associated with their recommendations. Resource Sponsors must address the top five issues of each claimant/component commander later in the programming phase.

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To identify and develop these issues, many commands solicit issues from their field activities. Each issue is evaluated and ranked in priority order. Financial management personnel such as budget analysts are involved in the development of claimant POM Issue Papers. They may review, edit, or answer questions from high level officials about the papers. In many cases the papers undergo many rounds of review, appeal and revision before they are complete. Resource Sponsors, the managers who have responsibility for programs and control over the money, respond to the issues.

A POM Issue Paper is designed to identify and define a specific concern and quantify the resources required to alleviate the concern. The objective when preparing an issue paper is to convince sponsors that the program or project being proposed will provide sufficient benefits to justify its cost. Therefore, it is important that the following be thoroughly documented:

- the background of the issue (the need that the program/project will address),
- the anticipated cost of the program/project,
- the benefits of the program/project, and
- how much money and resources the program/project is expected to save the Navy.

A POM Issue Paper is completed according to a standard format; consult with your command's program and budget development division for guidance and assistance.

2.3.3 PPBS Budgeting Phase. Budgeting is the final phase in the PPBS cycle. The budget expresses the financial requirements necessary to support approved programs which were developed in the preceding phases of planning and programming. It is through the budget that planning and programming are translated into annual funding requirements. During budget formulation, information that was expressed by mission is now expressed by appropriation. The budgeting phase is completed when the President sends his budget (with DoD input) to Congress in January.

The budget formulation and review process involves two main steps:

1.formulation — translating program decisions and costs into proper budget format with review, modification, and approval with the Department of the Navy (DoN), and

2.justification — presentation of the budget and several rounds of review and revision until it is finally passed by Congress.

The budget is formulated through a succession of inputs by sub-claimants and claimants. After that, it undergoes several rounds of formal review. By the time the budget is ready for Congressional approval, it has been reworked and refigured many times to make it accurately reflect the Navy's needs while staying within the budgetary constraints of the national economy.

Historically, the government has used an annual budget cycle. It was changed to a biennial, or two-year, cycle as the result of a provision in the FY-86 DoD Authorization Act. The law requires that DoD submit biennial budgets while the rest of the government uses annual budgets. As it stands now, budget formulation (using PPBS) extends over a two year period, and the President's budget reflects two years. However, in the second year the Navy may submit an amendment to the second half of the two-year budget.

2.3.3.1 Budget Call. Budget formulation begins when the Comptroller of the Navy issues a call for budget estimates to the Navy through the CNO and all other major claimants (budget submitting offices). The budget call is based on the budget guidance issued from the Assistant Secretary of Defense (Comptroller). As a result of the budget call, budget submitting offices convert the POM to a budget, changing its format and updating its contents.

2.3.3.2 Budget Request. While a budget call is defined as planning guidance from the top down the chain of command, a budget request is the budget that is submitted up the chain of command.

Table 3.1 Congressional R&D funding categories

Research Category	Goal
6.1 Basic Research	Increase the science know ledge base
6.2 Exploratory Development	Determine concept feasibility
6.3 Advanced Technology Demonstration (generic, Navy-wide)	Develop and test a proof-of-concept prototype
6.4 Advanced Development - Proof of System (platform specific, hardware systems)	Demonstrate how new technologies can form systems
6.5 Engineering Development	Develop production prototype
6.6 Management and Support of R&D Objectives	Studies to meet R&D objectives

3. MPT R&D FUNDAMENTALS

The purpose of R&D is to solve long-range, long-standing operational problems. R&D should be considered when analyses indicate that current policy, procedures, or systems either (a) work but could be significantly improved or (b) are inadequate and new solutions are needed. However, it is important to recognize that the primary function of R&D is the production of *new* information and/or technologies necessary to achieve mission objectives. When mission objectives can be fully realized using *existing* information and/or technologies, the use of R&D funding is not appropriate.

From a macro perspective, R&D can be viewed as a continuum of activities, from basic research through engineering development, in a multi-stage process of reducing uncertainty. In the early stages of research the risk of *not* finding useful information is high yet anticipated payoffs are also high. Thus, investment is warranted. In the latter stages of research, as early technological advancements transition to military applications, risk moderates while payoffs remain high.

3.1 CONGRESSIONAL R&D BUDGET

Table 3.1 describes the Program 6 Congressional budget categories for R&D. The first two categories, 6.1 and 6.2, form what is termed the *technology base*. They provide the technology push in the R&D process. When category 6.3

Advanced Technology Demonstration (ATD) is included with the technology base, the block of programs are referred to as *Science and Technology* (S&T).

The 6.1 and 6.2 R&D programs are managed by the Chief of Naval Research (CNR). Category 6.1 is funded primarily to universities with only a small portion for Navy Laboratories. Category 6.2 is funded to Navy Laboratories. Obtaining support from these programs requires close coordination with program managers at CNR.

The Director of Test and Evaluation and Technology Requirements (N091) is the Resource Sponsor for the MPT 6.3 R&D program as well as for Navy's ATD program. (Chapter 4 provides more information on ATDs.) N1/BUPERS is the Resource Sponsor for the 6.5 and 6.6 programs and currently sponsors no 6.4 programs.

N1/BUPERS is the Program Sponsor for Navy-wide MPT R&D and has direct control over the MPT-related 6.3 and 6.5 R&D programs as well as 6.6 studies and analyses. (See Table 3.2 for a listing of the relevant Congressional budget R&D Program Elements and their associated projects. Note that *projects*, in budget terms, refer to sub-categories of research within program elements. Specific individual research efforts within these project areas are technically referred to as *tasks* (however, in keeping with common usage,

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Table 3.2 MPT R&D Program Elements and Projects

Program Element	Project	Description
PE 0603707N	L0542 L1770 L1771 L1772 L1773	Manpower, Personnel and Training Advanced Technology Demonstration - Air Human Factors Engineering - Manpower and Personnel Development - Ship Human Factors Engineering - Education and Training Development - Simulation and Training Devices
PE 0604703N	L1822	Personnel, Training, Simulation and Human Factors - Manpower, Personnel and Human Factors Systems
PE 0605152N	L2097	Studies and Analyses Support - Manpower, Personnel and Training

individual tasks will be referred to as projects throughout this Guide).

The 6.3, 6.5, and 6.6 categories of R&D are requirements-driven and provide the requirements pull in the R&D process. The majority of R&D supporting the MPT mission is conducted with category 6.3 funds. Category 6.4 does not apply to MPT R&D; it is used for platform specific, hardware systems. Some large-scope projects may require transition to 6.5 (Engineering Development) to produce a prototype for acquisition specifications. Program 6.6 funds support N1/BUPERS management studies and analyses.

3.2 CRITERIA FOR 6.3 MPT R&D

The primary application of Defense R&D is acquisition of weapons systems and platforms. A consequence of the hardware acquisition emphasis has been that potential MPT R&D projects don't always tightly fit Defense R&D definitions. PERS00H works closely with the various Defense R&D administrative offices to ensure that the MPT R&D program meets prevailing standards for project suitability. PERS-00H is responsible to CNP for the development and defense of the MPT R&D budget.

Two key issues in determining the legitimate application of 6.3 funds are: (a) the level of technological risk (i.e., how much risk is enough?) and (b) the scope of the problem (i.e., how generic are the products — a demonstration prototype or a user-ready product?). The Navy RDT&E/Acquisition Management Guide defines

6.3 research as:

“... early examination of the feasibility of alternative concepts through Advanced Technology Demonstration... It involves experimentally demonstrating the feasibility and cost of combining technologies into building blocks ...

... The prime objective [of 6.3] is proof of design concept rather than the development of hardware for service use.”

These Navy 6.3 R&D project parameters can be clearly applied when considering the development of a complex weapon system. It is generally obvious that once such a system has been proven, building the hardware for service use requires going into costly production. However, when applied to MPT, distinctions between proof of design concept and system development become less clear. Legitimate 6.3 MPT R&D projects often deliver products that can be put into immediate use without the need for further acquisition. This is partly because a large percentage of R&D products are software rather than hardware (e.g., information management programs, forecasting models, curriculum enhancements) and partly because N1/BUPERS and N7/Chief of Naval Education and Training (CNET) are frequently the sole Navy users for many MPT R&D deliverables.

To determine specifically whether a proposed

MPT R&D FUNDAMENTALS

MPT R&D effort is appropriate for advanced development, PERS-00H continually evaluates projects against the below six criteria. Projects should:

1. Involve a technology which has the potential to improve military capabilities, or meet a specific military requirement
 - What is the operational deficiency (in quantitative terms) to be addressed by the effort?
 - Is the deficiency MPT related?
 - What is the significance of this deficiency?
2. Represent a technological opportunity
 - What is the technology that is central to the system under development?
3. Have high payoff associated with moderate to high risk (i.e., success is uncertain)
 - Why is R&D required? Why can't the operational system be developed immediately? Is similar or related R&D work being conducted elsewhere?
 - What are the risks involved in system development?
 - What is the uncertainty in system feasibility that is being identified and reduced in the project? For example, does the planned demonstration test technical, organizational, and/or fiscal feasibility? How will this effort reduce the uncertainty?
 - What is the breadth (or specificity) of application of this technology across other Navy, DoD, and/or commercial systems?
 - What are the technical or scientific limitations that must be overcome in order for the development to be successful?
4. Have clear markers—Measures of Effectiveness (MOEs)—indicating whether or not the technology will work and will provide improvements to the operational system
 - What are the MOEs that will indicate whether or not the system is feasible and should be implemented? Have/will MOEs been agreed to by *both* sponsors and researchers?
- What determines when the 6.3 effort is finished?
5. Provide for testing or evaluation against other system options, including the status quo
 - What are the system alternatives (including status quo) that will be evaluated and compared?
 - Is the evaluation methodology robust? Can an experimental or quasi-experimental design be employed?
6. Have a high probability that transition to full scale development and implementation will follow successful advanced development.
 - If risks are reduced or eliminated, how will the system be implemented? How will full-scale development and implementation be funded? Who will sponsor the implementation?

3.3 CRITERIA FOR TRANSITIONING TO 6.5 R&D

As discussed, category 6.3 MPT efforts often transition directly into operational status. However, some large-scope projects may require transition to 6.5, Engineering Development, before becoming operational. That is, following a successful 6.3 funded proof-of-concept demonstration, continued (but less risky) R&D may be necessary for broader application of the technology.

Since N1/BUPERS 6.5 funding is very limited, competition for such funding is intense. Moreover, funding in this category is limited to two years, with a review of continued funding held at the end of the first year. Project sponsors external to N1/BUPERS should plan for use of their own category 6.5 funds when advanced engineering development is necessary.

To be considered for 6.5 MPT R&D funding,

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projects should meet the following criteria:

1. The requirement that drove the initial 6.3 effort should still be valid and endorsed by the sponsor.
 - Has the project followed the prescribed course as originally defined in the Technical Development Plan (TDP)? If not, has the redirected effort received flag-level endorsement?
2. The work being proposed should extend 6.3 MPT R&D products for broader Navy application.
 - Is the planned R&D less risky than that performed with 6.3 funding (i.e., of moderate to low risk)?
 - Does the proposed work constitute an extension or expansion of that done in 6.3 (in contrast to troubleshooting, debugging, or refining the previous work)? What additional technical or scientific issues must be resolved before the technology can be broadly implemented?
 - Why would Operations and Maintenance, Navy, (O&MN) funding (i.e., full system development/implementation) not be appropriate at this point in time? Why is continued R&D required?

3.4 R&D WITH O&MN AND OPN FUNDS

There are other sources of funding that can be brought to bear on both R&D and studies and analyses. For MPT projects, O&MN and Other Procurement, Navy (OPN) are most common. O&MN and OPN funds can be invested in both R&D efforts and studies on a reimbursable basis to Navy laboratories. These funds can also support work contracted out to private sector organizations such as universities, consulting firms, and commercial laboratories. However, in such cases liaison with PERS-00H is strongly recommended to (a) ensure that similar work is not in-process or already completed, (b) ensure

compliance with OPNAV and Secretary of the Navy (SECNAV) directives, and (c) obtain staff technical assistance in developing requests for proposals and statements of work.

3.5 6.3 R&D VS STUDIES & ANALYSES

When exploring options for solving a problem that cannot be remediated through immediate management action, it is necessary to decide whether R&D or study/analysis is needed. Table 3.3 outlines the differences and similarities between the two types of effort. Although these differences may seem arbitrary, distinguishing between the two processes is important since they typically involve different organizations, data, skills, types of funding, and time needed to get an answer or develop a solution. Chapter 6 provides background on obtaining support for studies and analyses.

3.5.1 Studies and Analyses. Studies and analyses are of short duration and address a specific policy issue or question. Studies and analyses usually do not generate new scientific knowledge *per se*; they are designed to organize and evaluate data and information already available (or which can be inferred or extrapolated from existing data). The Center for Naval Analysis (CNA) is the primary performing activity for studies of economic factors related to manpower, personnel or training. The Naval Training Systems Center (NTSC) is the primary performing activity for studies that evaluate training-related policy and procedures. The Navy Personnel Research and Development Center (NPRDC) is the primary performing activity for studies that examine personnel policy or that require data collection such as surveys.

Studies are usually funded with O&MN money, however N1/BUPERS also maintains a small 6.6 budget for studies. The 6.6 studies and analyses program is used by CNP to address important emergent problems. This program enables BUPERS to quickly tap the expertise of researchers working on MPT issues.

Table 3.3 Differences and similarities between R&D and Studies/Analyses

Research	Studies
<ul style="list-style-type: none"> • Of relatively long duration (12 to 48 months) • Finds a solution to a generic problem • Often results in programmatic changes that involve a tangible product • Data often must be collected • May require some experimentation • Involves moderate to high risk 	<ul style="list-style-type: none"> • Of relatively brief duration (< 12 months) • Finds an answer to a specific question • Normally provides decision support • Data is nearly always available • Rarely involves any experiments • Little or no risk involved
Both R&D and Studies	
<ul style="list-style-type: none"> • Seek answers to MPT policy questions • Are data-based • Rely upon statistical analyses • Are conducted by professional researchers • Are tasked through PERS-00H 	

3.5.2 Research and Development. As discussed previously, R&D represents a long-range investment and is initiated to tackle long-standing, systemic problems. R&D requires the collection of primary data, a time-consuming process, in order to identify problem parameters and to test and evaluate potential solutions. Because of this, R&D costs more than studies and often extends over several years, with three years being the norm.

Due to the length of the R&D process, benefits may not accrue during a given Project Officer's tenure. Finally, since R&D projects are directed toward creating new capabilities there is also the risk that projects may encounter insoluble problems requiring a revised technical development approach.

4. MPT R&D PROGRAM MANAGEMENT

This chapter is concerned with explaining the program development process for the 6.3 and 6.5 MPT R&D programs. (The term “programs” as used here, refers to the collective of requirements-based projects and tasks to be supported by the two program elements, PE 0603707N and PE 0604703N, which currently support 6.3 and 6.5 MPT R&D, respectively.) Key players and their roles are identified and program development is outlined as a sequential and cyclical process. Emphasis is placed on the annual process of requirements identification, requirements validation and program review. Detailed discussion of individual project (task) management and execution is reserved for Chapter 5.

Figure 4.1 depicts the structure of the 6.3 MPT R&D program. Technically speaking, the top element in the figure is the PE which provides Congressional authorization for funding the program. As discussed in Chapter 2, N091 is the Resource Sponsor and N1/BUPERS is the Program Sponsor for the 6.3 MPT R&D program. It is at this level that the PE is planned, programmed and budgeted.

Each of the five subordinate elements are major MPT thrust areas, or “projects.” Prior to FY-93, each of these projects were funded through separate PEs and were referred to as separate programs. Effective in FY-93, they were consolidated into one PE (0603707N) to comply with Congressional direction to reduce the number of PEs. The distribution of 6.3 MPT R&D funds across projects remains proportional to allocations prior to the consolidation.

Projects are comprised of multiple “tasks.” Each task is a discrete R&D effort planned and executed in response to an operational requirement. Annually, requirements that may be amenable to R&D solutions are solicited from claimants (Project Sponsors who use and apply R&D products). Each task is assigned a Project Officer

by its Project Sponsor. Because of the traditional association of the label “project” with tasks, as noted in section 3.1, individual tasks will be referred to as projects throughout this Guide (except where necessary to maintain the technical distinction).

4.1 MPT R&D PROGRAM MANAGEMENT KEY PLAYERS

Below are listed key parties involved in the management of the R&D program and a brief description of their roles.

4.1.1 PERS-00H. PERS-00H provides the staffing for CNP and the Deputy Chief of Naval Personnel(DCNP) on all R&D matters. PERS-00H is the MPT R&D point of contact for Navy higher authority and defends the program to OSD and Congressional committees. They process formal requests for R&D support, clarify, and strengthen requirements statements, find lab support, etc. PERS-00H also coordinates development of the annual R&D program and monitors the progress of projects for CNP. Refer to Chapter 1, Table 1.1 for a listing of PERS-00H R&D management functions.

4.1.2 Project Sponsor. Project Sponsors (i.e., OPNAV, BUPERS, CNET) submit and validate operational requirements for R&D. Project Sponsors assign Project Officers to provide functional area oversight of R&D efforts and to coordinate the evaluation and implementation of R&D products.

4.1.3 MPT R&D Executive Steering Committee (ESC). The ESC makes the final call on the MPT R&D program. Chaired by DCNP, the committee is composed of MPT claimant Flag officers, and is responsible to CNP for the content of the MPT R&D program.

4.1.4 N911 (Science and Technology Requirements Division of N091). N911 represents SECNAV and (Vice Chief of Naval Operations) VCNO interests through management of the funding levels for each N1 program element. They set the cap on funds available for the MPT R&D program and projects. This makes them N1's link with both FMB and OSD.

4.1.5 Office of Naval Research (ONR). ONR represents SECNAV's interest in the Navy R&D program. Unlike N091, whose focus is on R&D planning, ONR's focus is on program execution. Consequently, ONR attends to factors such as transition/implementation, risk level, and obligations/expenditures.

4.1.6 Office of the Secretary of Defense (OSD). coordinates inter-service R&D efforts, and helps SECDEF monitor 6.1, 6.2, 6.3, and 6.5 linkages. Along with N911 and DoN, OSD represents R&D on Capitol Hill.

4.1.7 SYSCOMs and/or the Fleet. Working through OPNAV (i.e., N6P, N869, N879, N889), the SYSCOMs and/or the Fleet are primary sources of operational requirements. As users of R&D products, they are responsible for the transition/implementation of successful research products.

4.1.8 Labs/Performing Activities. Performing Activities are responsible to Project Sponsors and CNP for conduct of the research. They coordinate with the Project Officer to set key mile stones, develop the technical approach, determine R&D products, and calculate the amount of money necessary to support the R&D.

4.2 OVERVIEW OF THE MPT R&D PROGRAM DEVELOPMENT PROCESS

This section presents an overview of how the MPT R&D program is developed. It is provided primarily as reference material to place project management (to be discussed in Chapter 5) into a

program context.

Research and development should be done to develop technologies, methods, or systems to achieve future goals. Therefore, programmatic R&D should be guided by MPT QMB long-range plan goals and objectives. In some cases the long-range plan itself will identify unmet requirements. In other cases, the need for R&D might arise as efforts progress toward implementing objectives to achieve long-range goals. Figure 4.2 graphically summarizes the MPT R&D program development process. Table 4.1 provides a rough timetable for the annual program development process.

4.2.1 Requirements Identification. To begin developing the next fiscal year's R&D program, PERS-00H annually (in July, 15 months before the start of the FY) solicits prioritized operational requirements that are currently not being met from N1/BUPERS, N7/CNET, N6, N8, SYSCOMS, and the Fleet. As appropriate, a BUPERS Assistant Chief or OPNAV flag validates, prioritizes and sponsors the potential R&D. The sponsor then identifies a preliminary Project Officer and formally submits to DCNP, through PERS-00H, a requirements document called a Problem Description and Needs Justification (PDNJ) for each potential project (See Appendix A for the PDNJ format).

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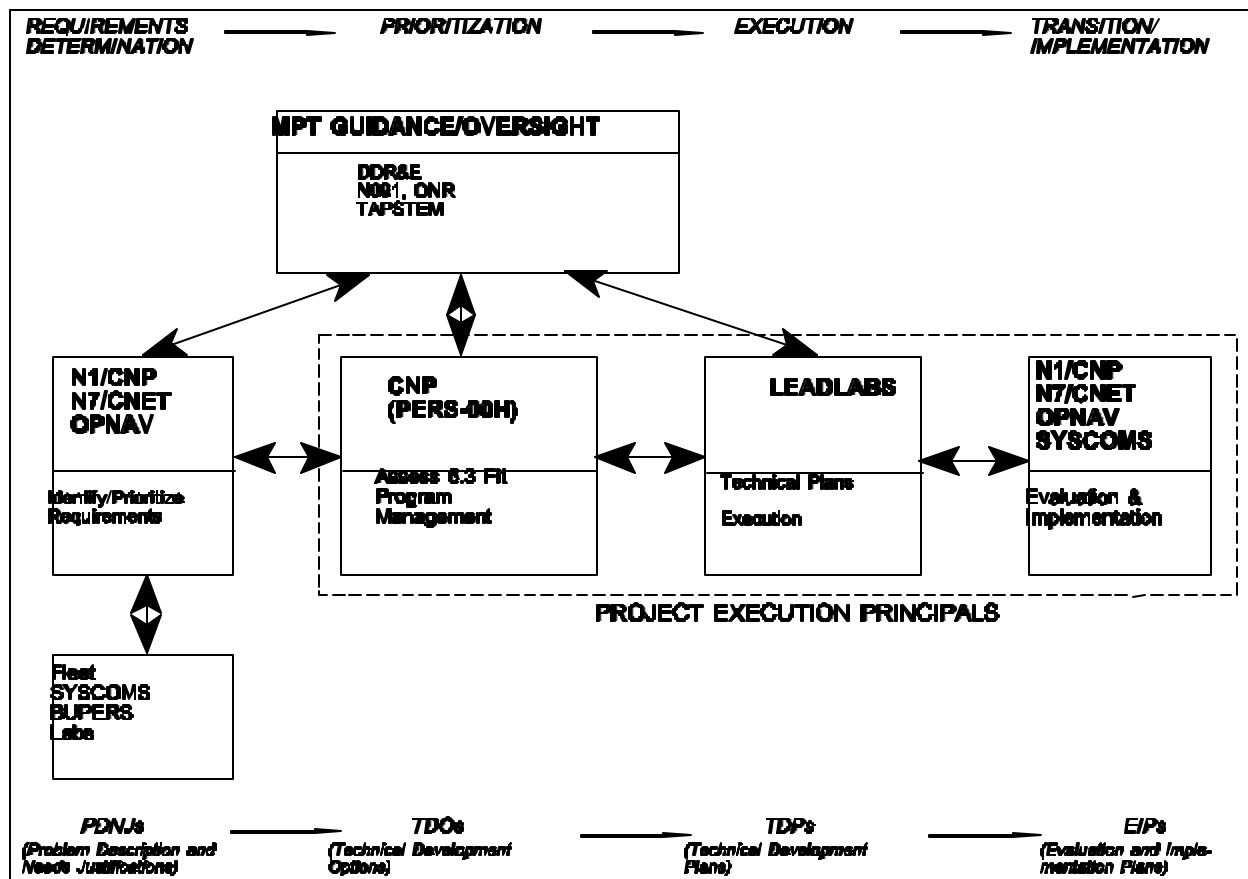


Figure 4.2 MPT R&D program management overview

4.2.2 Technical Development Options (TDO). The PERS-00H research staff review all flag-endorsed PDNJs and task the appropriate Navy lead lab to develop several alternative solutions or Technical Development Options (TDO), which include cost estimates (See Appendix B for the TDO format).

TDOs are reviewed by PERS-00H for their fit to 6.3 MPT R&D criteria and funding controls. Recommendations are made regarding the various options and Project Sponsors assess the options' responsiveness to requirements.

4.2.3 Technical Development Plan (TDP). Upon sponsor selection of a preferred technical development option, PERS-00H tasks the lab to develop a detailed Technical Development Plan (TDP; See Appendix C for the TDP format).

The lab develops the TDP in consultation with

the project's sponsor. The TDP identifies the technical approach, project milestones (POA&M), major products, and the costs associated with each product. It becomes the basis for project management during the life of the effort. Upon receipt of the TDP, PERS-00H requests formal endorsement of the TDP from the Project Sponsor. Note that deviations (e.g., contracts, milestones, costs, etc.) from an approved TDP during project execution must be coordinated with PERS-00H prior to action.

Table 4.1 MPT 6.3 R&D annual program development schedule

Month	Action
August	- Solicit prioritized R&D requirements (PDNJs) for development of next FY program.
October	- Requirements are validated and lead laboratories are tasked to propose alternative R&D solutions (TDOs).
Nov - Dec	- Laboratories develop TDOs.
January	- TDOs are evaluated for fit to 6.3 criteria and responsiveness to requirements, sponsor endorses an alternative, and performing lab is tasked to develop initial Technical Development Plans (TDPs). Prioritized requirements are presented to N1B and flag sponsors for approval.
Feb - Apr	- Laboratories develop TDPs.
May	- TDPs are evaluated for fit to 6.3 criteria and responsiveness to requirement. Sponsors prioritize and endorse TDPs. R&D program is developed and submitted to N1B for approval for execution.

4.2.4 Program Review and Approval. After collecting all sponsor endorsed TDPs, PERS-00H puts together a “strawman” program for the next fiscal year. An MPT R&D working group (chaired by PERS-00H and comprised of sponsor representatives) reviews the program and makes recommendations regarding project continuations, terminations, and new starts to the MPT R&D ESC. The MPD R&D ESC then reviews and endorses the program. Finally, the MPT R&D program is forwarded to CNP for endorsement. Upon notification of a project’s funding by PERS-00H, Project Sponsor’s formally designate a Project Officer to each sponsored project.

The performing lab commences work on approved projects at the beginning of the fiscal year following the program development year. As soon as practical following initiation of a project, the Project Officer forms an Implementation Planning Group (IPG) to prepare an Evaluation and Implementation Plan (EIP). The EIP becomes the plan for evaluating R&D product(s) suitability for implementation. It also forms the basis for programming O&MN resources into the POM to support final products during their post-implementation life-cycles (Appendix D describes the content of an EIP; Chapter 5 provides detail on transition/implementation planning).

4.3 PROGRAM FISCAL MANAGEMENT

For fiscal matters, N091 is the Resource Sponsor, N1 is the Program Manager, ONR is the R&D Claimant and PERS-00H is the Administering Office. PERS-00H, as the Administering Office, is responsible for:

- Authorizing distribution of funds to performing activities
- Tracking obligation and expenditure of R&D funds
- Coordinating development of reclaims
- Preparing financial documents
- Coordinating/providing briefings to N091, ONR, FMB, and OSD

4.4 OBTAINING FUNDS FOR ATD PROJECTS

The Advanced Technology Development (ATD) Program is funded through a special program element of the 6.3 program and is managed by N911 (however, ONR provides oversight during execution). The ATD program was initiated to accelerate the transition of high-risk, emerging technology projects. It was established by two memoranda: (a) CNO memo 3900 Ser 987B/6U35584 of 8 Dec 86, and (b) CNO memo 3900 987B/053-88 of 2 Sep 88.

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Table 5.1 FMB targets for project obligation and expenditure rates

Month:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Obligation:	45%	53%	61%	67%	75%	78%	82%	85%	95%
Expenditure:	8%	12%	17%	23%	29%	36%	42%	48%	55%

Because 6.3 programs normally have a single sponsor, projects that have users from different communities often find transition either from 6.2 to a 6.3 level of effort or to fleet application hampered by budget disputes regarding project ownership. The objectives of the ATD program are to:

1. Increase rollover, completion, and transition of 6.3 projects.
2. Reduce the total number of 6.3 Program Elements.
3. Achieve a 20% average annual rollover of 6.3 projects.
4. Infuse new ideas and concepts into level-of-effort 6.3 programs.

ATDs avoid internal budget disputes and other delays because they represent a separate source of funds. That is, they do not need to be programmed and expended from any one program sponsor's PE (such as the MPT R&D PE 0603707N). Consequently, ATDs represent an independent source of R&D Program funding.

Although ATDs are not funded through the MPT R&D PE, there are two important factors to consider. First, ATDs are more competitive than programmed 6.3 R&D. The ATD program applies Navywide, not just to N1/BUPERS projects. Second, for a project to compete favorably for ATD support, projects must have a short life cycle (1 to 3 years). In addition, transition/demonstration plans must be clear, and provide evidence of active user/sponsor involvement. The format for requesting an ATD is presented in Appendix E.

5. MPT R&D PROJECT MANAGEMENT

The purpose of this chapter is to provide detailed guidance for individual project execution and transition/implementation. Although not absolutely mandatory for understanding, significant benefit can be gained by reviewing the appendices as they are referred to throughout the text.

5.1 PROJECT OFFICER APPOINTMENT

Formal designation of a Project Officer by a Project Sponsor occurs after notification that a project has been approved for funding. The Project Officer normally should not be encumbered by additional duties, but should be permitted to devote sufficient time and attention to the project commensurate with the magnitude of the resources to be expended. This point is particularly important with regard to those R&D projects which involve development of, integration with, and/or transition to complex hardware and software systems. Project Sponsors should ensure that adequate personnel and fiscal resources will be available to support transition/implementation life cycle management costs.

Project Officer appointing letters follow a standardized format described in Appendix F. The appointment letter formally stipulates Project Officer authority and accountability. In particular, the project's TDP becomes the agreement (contract) between the Project Officer and the Performing Activity (research lab/principal investigator). The TDP specifies the goals, objectives, POA&M, deliverables, and cost of the project.

5.2 PROJECT OFFICER RESPONSIBILITIES

5.2.1 Fiscal. A major responsibility of Project Officers is to ensure that contracts are sequenced and let early enough to obligate and expend funds at a rate consistent with Navy Comptroller guidelines. Table 5.1 presents suggested obligation and

expenditure rates for each month following the first execution quarter. A project's execution activity should meet or exceed these monthly goals.

Fiscal account activity is monitored closely by PERS-00H. Any inability to commit and/or expend project funds might be considered to be evidence of over-funding. This can result in execution year cuts and out-year reprogramming. In the event that program technical or level-of-effort problems require additional or deferred funding, an explanation should be provided in the Project Officer's next quarterly report. PERS-00H will coordinate necessary reports to N091, DoN, ONR, and OSD.

5.2.2 Execution Management. Project Officers must establish a working relationship with the Performing Activity to ensure good two-way communication. During critical stages, daily conversations and frequent visits may be required to ensure that the R&D product is capable of meeting mission requirements. This doesn't mean that Project Officers should "micro-manage." Micro-management can delay progress toward meeting milestones and denies the expertise of those performing the research. Generally, the performing activity makes the technical decisions. The Project Officer makes decisions that require alteration of the TDP (However, deviations (e.g., contracts, milestones, costs, etc.) from an approved TDP during project execution **must be coordinated with PERS-00H prior to action**).

Project Officers should conduct reviews and meet with the project's principal investigator frequently enough to ensure that TDP milestones are met. Periodically, a risk assessment should be made to measure probability of success. It is the Project Officer's responsibility to conduct a cost vs benefit analysis of the project. At a minimum, the Project Officer should know how much it costs to conduct affairs prior to the R&D, the cost of

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employing the new product/system/procedures, the cost of the R&D itself, the cost of transition (including removal or change of original systems as well as training costs), and the amount of savings/benefit to the Navy.

In the event that a significant delay in delivery of the final product is anticipated, a decision review must be held by the Implementation Planning Group (IPG). The IPG helps Project Officers track and assess the potential impact of project implementation. Working in cooperation with the principal investigator, the IPG plans how to test and evaluate the project's products in order to determine if they will work. The Evaluation and Implementation Plan (EIP) documents the IPG's plans, and serves as a guide for determining whether the product works sufficiently well to merit full implementation.

5.2.3 Implementation. It is the Project Officer's responsibility to identify who will play a role in implementation, and to ensure that coordination is accomplished. Creating an IPG is the best vehicle for coordinating implementation. The IPG also facilitates endorsement of the implementation Memorandum of Agreement, jointly signed by the senior member of the User and Sponsor activities. A more detailed discussion of implementation planning is provided in Section 5.3.

At the end of the first year of project work, the Project Officer prepares a status review of project implementation plans to be presented to the project sponsor. Based upon the EIP presentation, the project sponsor determines the probability of successful implementation given the funding level approved in the project TDP. A decision is made at that point whether to proceed or terminate the project. All project sponsor briefs should include the following information:

- Project status (chance of success, time to

pletion)

- Funding status (over/underspending, cost to complete)

- Status of implementation planning/funding

- User involvement/non-involvement

- Future direction (terminate/redirect/continue)

5.2.4 Periodic Reporting. Quarterly status reports must be submitted by all Project Officers to PERS-00H. These reports summarize key issues derived from quarterly status reports submitted by the performing activity. In addition, the Project Officer should be prepared to brief, in depth (with the support of the performing activity), the project's status annually and as required (See Section 5.3.6 for additional discussion). The format for Quarterly status reports is provided in Appendix G.

5.2.5 Final Report. A project final report must be submitted by the principal investigator of the performing activity for each R&D project. The Project Officer reviews the final report, and submits it for approval to the project sponsor. The final report should include five elements. It should:

- 1.Summarize the problem addressed by the research.

- 2.Describe what actions the investigator(s) took to address the problem.

- 3.Present data used to establish facts relevant to solving the problem.

- 4.Establish how recommendations for changes in policy, procedures and systems were validated.

- 5.Document any software developed or specifications established for guiding procedures or decision-making.

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5.3 MPT R&D EVALUATION AND IMPLEMENTATION PLANNING

5.3.1 Implementation Planning Group (IPG).

Once work has begun on a project, the Project Officer must begin planning for product implementation. During the first year of the project, the Project Officer develops an Evaluation and Implementation Plan (EIP) with the assistance of the Implementation Planning Group (IPG). Content guidance for an EIP is provided in Appendix D.

The IPG is chaired by the Project Officer. Its task is to ensure that end-users successfully transition R&D projects to operational use. The IPG has responsibility for three major project milestones: (1) developing an EIP, (2) conducting the pilot demonstration and technical evaluation, and (3) implementing the project product(s). The IPG is composed, at a minimum, of the Project Officer and representatives from the Performing Activity, the User/Client organization(s), and the User/Client Maintenance Activity (e.g., PERS-10 for all BUPERS computer models and databases). PERS-00H, as the Program Manager, should be informed of IPG meetings and retains the right to participate.

5.3.2 Roles of IPG Members. As Chair of the IPG, the Project Officer is responsible for staffing the invitation of IPG members, scheduling meetings, developing meeting agendas, and coordinating development of the EIP. In situations where it is not manifestly clear where implementation responsibilities lie, a Memorandum of Agreement (MOA) between the players may be beneficial. (There is no specific standard for the format of an MOA, however, see Appendix H for an example.) This agreement should clearly delineate each agent's implementation responsibilities. It should cover the areas of training, support, funding, Life Cycle Management, and Integrated Logistics Support issues. The Implementation POA&M (from the EIP) can serve as a checklist to aid in drafting the MOA to insure that all the actions are covered. Project Officers need to be certain that sponsor(s) *and* user(s) are satisfied with the project TDP and EIP.

The Project Officer is a member of the organization responsible for directing use of the research product activity-wide or Navy-wide (the Project Sponsor). The Project Sponsor is ultimately responsible for ensuring that O&MN funds are programmed sufficiently far in advance to achieve successful R&D product implementation.

User/Client representatives are members of the working level units that have a specific problem to be solved. Users play a critical role in defining the initial problem and are the ultimate evaluators of the effectiveness of the R&D product(s). Consequently, the users have primary responsibility for identifying criteria and parameters for product acceptance.

The Performing Activity representative is usually the principle investigator assigned to conduct the research. The principle investigator executes the technical development, test, and evaluation of the R&D product(s). He or she provides major input for the establishment of the implementation POA&M in support of the EIP. The principle investigator also provides information on project progress (when formal, chopped by Project Officer) and explains reasons for changes in schedule, budget variances, and any necessary modifications in product configuration/specification due to technical problems.

5.3.3 R&D and Life Cycle Management.

Life Cycle Management (LCM) is the standard management discipline for cost-effectively acquiring and using resources throughout the life of an Automated Information System (AIS). During execution of an R&D project, formal LCM documentation is not required. However, IPGs for projects with an AIS product (or incremental products) that are targeted for transition to operational status must plan for the eventual rigors of LCM procedures and documentation. Proper LCM documentation, compliant with Navy policy and guidance (e.g., SECNAVINST 5231.1C, Life Cycle Management Policy and Approval Requirements for Information System Projects) is mandatory for system approval and implementation.

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It must be noted that costs strictly associated with LCM documentation and procedures must be born by the system owner. However, documentation produced during the course of the research process (e.g., PDNJ, TDP, front-end analysis, EIP) can satisfy, with modifications, many of the data requirements of LCM phases and milestone decisions.

Currently, CNO N12 is the MPT Information Resources Management (IRM) functional sponsor. However, R&D projects that involve any hardware system under the sole authority of BUPERS should coordinate LCM with PERS-10, the BUPERS IRM Office. Upon project funding approval, and prior to any software development, a copy of the PDNJ should be forwarded to PERS-10. This will inform them of the R&D requirement and open a file for future LCM documentation. PERS-10 will facilitate the necessary coordination with N12.

R&D projects that involve hardware systems external to BUPERS should coordinate LCM and transition planning with the cognizant IRM Office.

5.3.4 Planning and Programming Resource Support for Transition/Implementation. The Project Officer and the IPG ensure that Project Sponsor(s) plan for and program transition and implementation support (e.g., 6.5 Engineering Development, OPN, O&MN) far enough in advance to meet transition milestones set forth in the TDP and the EIP. Failure to provide for transition support will very likely result in a loss of project momentum, and eventual project collapse.

In some cases projects sponsored by N1/BUPERS may warrant 6.5 Engineering Development support to achieve broader application. (Refer to Section 3.3 for a discussion of the criteria for transitioning from Navy-wide 6.3 Advanced Technology Demonstration to N1/BUPERS funded 6.5 Engineering Development.) In those cases, Project Officers should consult informally early-on with PERS-00H to plan for such support. Appendix I provides format and content guidance

for submitting a Technical Development Plan for 6.5 work.

With regard to O&MN and/or OPN funding, the Project Officer should consult with Project Sponsor personnel who are responsible for programming POM submissions. They can provide guidance for developing budget justification for the project (See Appendix J for an example claimant issue paper).

The Project Officer must make certain that funds are programmed, not only to place the R&D product into operation, but also to evaluate its effectiveness prior to implementation. Evaluation can take a few weeks or run into many months. Moreover, additional expenses can accrue if significant product adjustments are required to maximize product effectiveness/efficiency. The IPG exists to help plan for smooth transition into implementation.

5.3.5 Programming O&MN Support for Post-Implementation Maintenance. It is important that the IPG also include in its planning the programming of O&MN funds for post-implementation product support. This applies especially to manpower projection models, manpower assignment programs, and their associated data bases. Manpower models and databases frequently require ongoing life-cycle-management to update or reconfigure. Changes in CNP policy, funding bases (e.g., MPN), demographics, etc. can require updates and model modifications. Without well-maintained models and data bases, recruiter allocation, officer and enlisted community staffing goals, order-writing, and many other Navy personnel functions become disabled. The IPG should include O&MN planning in its EIP, and programming should begin as soon as accurate funding estimates are available.

5.3.6 Monitoring the Status of a Project. As discussed, the Project Officer is charged with ensuring that a project remains responsive to a valid requirement; that it is on schedule; that it is on track technically and fiscally; and that evaluation and implementation planning is timely and

thorough. The Project Officer is assisted in these responsibilities by the talents and expertise of members on the IPG, including the performing activity. Nevertheless, the Project Officer should have a complete and ready understanding of all aspects of a project's status. The following several sections provide a limited (i.e., not necessarily comprehensive) list of questions/items that may reasonably be used to assess a project's status.

5.3.6.1 Requirement for and Transition of Research Product(s).

- Is there a flag-endorsed PDNJ; is it still valid/supported?
- Describe the final product(s); how will they be documented?
- What is the host operational system; how will the research product(s) be incorporated? Who has action; who will provide funds; when will implementation occur?
- What is the viability of the host system; are there competitors; when is fleet introduction?
- Describe pay-off; has a benefit analysis been done?
- Who will use the final product(s); will use be Navy-wide? Who has cognizance; who will fund?
- Will product move into 6.5, Engineering Development? Who is 6.5 sponsor; what are funding levels?
- Has an IPG been formed; what is its status?
- Has an EIP been written; is it current?
- Are LCM issues and requirements understood; is the LCM process on track as appropriate (i.e., documentation, approvals, funding, computer resources)?

5.3.6.2 R&D Technical Status.

- What is the underlying technology in the project?
- What 6.2 Exploratory Development work contributes to the project?
- What is the investment in supporting hardware/software for this project by FY?
- Have any substantive changes been made to the baseline TDP? If so, what was the cause; how were changes accomplished; was

the revision endorsed?

- Are project milestones still on target?
- Has any reprogramming or restructuring taken place?

5.3.6.3 Assessment of Technology.

- Who has oversight/responsibility for all project technical work?
- Is there any dual-use technology present in the project?
- What safeguards against duplication with other efforts have been effected?
- What assessment has been made of the state of the technology in this area?
- What is the performing activity's comparative strength in this area of technology?

6. MPT STUDIES & ANALYSES MANAGEMENT

Studies and Analyses are usually funded with O&MN money, however, N1/BUPERS also maintains a small budget (Research and Development Program 6.6 funds) for quick-response, executive decision-support. Its purpose is to fund studies/analyses of high-profile, emergent topics directly affecting MPT policy and procedures. As such, studies/analyses are brief in duration (3 to 12 months) and usually receive the direct attention of CNP.

As CNP's Research Management Advisor, PERS-00H coordinates, reviews, and tasks all studies and analyses in response to flag-level requests for support from N1 division and BUPERS department directors or other N1/BUPERS claimants such as the Commander, Naval Recruiting Command (CNRC; Note that hereafter, "division staff" or "division director" will refer to the N1 organization as well as equivalents within BUPERS or other N1 claimants). **Because program funds are very limited, requests for studies and analyses support which originate from outside N1 or which lack flag endorsements will normally be disapproved.**

The Navy Personnel Research and Development Center (NPRDC), is N1/BUPERS' lead performing activity for conducting MPT studies and analyses. In response to validated requirements and tasking from PERS-00H, NPRDC proposes technical development options and executes the study plan approved by the division and PERS-00H. NPRDC researchers work closely with the division designated project officer to ensure sponsor satisfaction with deliverables.

6.1 REQUIREMENTS IDENTIFICATION AND REVIEW

6.1.1 Requirements Identification. Given that studies and analyses are requirements-driven, problem identification is primarily the responsibility of division staff. However, staff may consult

informally with researchers to clarify what issues can benefit from study/analyses and to obtain a quick estimate of whether a study is likely to produce results in time to be helpful.

6.1.2 Requirements Review. Requests to PERS-00H for studies/analyses support should be chopped through the originating division's R&D Coordinator and the flag-level division director. The Coordinator can help validate requirements and offer guidance on staffing at the branch and division levels. Appendix K provides an example request to PERS-00H for a study/analysis. All requests should contain the following:

1. Brief description of the problem to be addressed
2. List of products/deliverables required
3. Mission-critical timelines
4. Identification of the project officer who will serve as the division point of contact
5. Optional - preferred performing activity (provide supporting justification if other than NPRDC)

Although requests for studies/analyses may be submitted at any time, submission of requests early in the fiscal year will ensure consideration among competing requests. When a division submits requests for several separate studies, the relative priority of each should be specified. PERS-00H staff are available to assist both N1/BUPERS staff and researchers with information and advice regarding obtaining studies and analyses support.

PERS-00H is responsible for identifying and administering resource support for all flag-endorsed division study/analyses requirements. The PERS-00H review process assures CNP that limited studies and analyses resources address only valid, high-priority requirements. PERS-00H staff compile all supporting information establishing the validity, priority, and urgency of requirements.

They also seek to identify alternatives to 6.6 funding support for a project. If alternative analytical support can not be identified, PERS-00H requests a studies and analyses technical proposal from the appropriate performing activity.

6.2 TASKING AND REVIEW OF STUDY TECHNICAL PROPOSALS

6.2.1 Tasking of Technical Proposals. Technical proposal writing consumes resources. Therefore, **performing activities should prepare studies and analyses technical proposals only when tasked by PERS-00H.** Technical proposals should contain a POA&M that offers a minimum of two technical development options: (a) a quickest response (where cost is not the primary factor) and (b) a least-costly response (but results are delivered within 12 months). The format for study/analysis technical proposals is provided in Appendix L. Study technical proposals should be submitted by performing activities to PERS-00H via the respective sponsoring divisions.

6.2.2 Review of Technical Proposals. Sponsoring divisions should review each technical proposal to ensure that mission requirements will be met by the most responsive and cost-effective means. Upon receipt of a division's recommendation and the performing activity's technical proposal, PERS-00H makes a resource decision based primarily upon the following five criteria (contingent upon the availability of funds):

1. There is flag-level validation of the study/analysis requirement (in the form of a memorandum from an N1).
2. The work directly addresses the issues of concern (i.e., the study technical proposal straightforwardly addresses N1/BUPERS policy/procedural problem).
3. The POA&M and level of effort proposed seems commensurate with the severity and urgency of the problem addressed and the funds available (i.e., the resources request-

MPT STUDIES & ANALYSES MANAGEMENT

ed are the minimum necessary to meet mission requirements in time to affect the decision-making process).

4.All necessary supporting and background material are available for review (i.e., all correspondence, point papers, references, and other supporting information are physically available).

5.There is no alternative support available for the project (i.e., alternatives have been explored such as division budget reprogramming or use of N1 study support such as the Center for Naval Analysis).

6.3 STUDIES & ANALYSES EXECUTION

6.3.1 Role of Project Officer. Upon final approval and funding of a study/analysis the requesting division should formally designate an individual to serve as project officer for the life of the study. Project Officer responsibilities are similar to those described in Chapter 5 of this Guide but on a reduced scale. The Project Officer is responsible for study execution management and implementation planning. Execution management involves:

- 1.Communicating with the researchers performing the work to ensure responsiveness to the requirement;
- 2.Bringing to PERS-00H's attention any significant, unresolved problems that may arise during the conduct of the study;
- 3.Informing PERS-00H of any changes in funding requirements;
- 4.Reviewing and forwarding to PERS-00H NPRDC generated quarterly status reports of study progress; and
- 5.Informing PERS-00H of completion of the study and forwarding a copy of the study final report.

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Implementation planning involves ensuring the necessary support for testing/evaluating and applying/using study products.

6.3.2 Role of Performing Activity. The performing activity is primarily responsible for remaining responsive to the original requirement and adhering to the approved POA&M. The performing activity should report quarterly, via the division sponsor, to PERS-00H on study progress. The quarterly status report should follow the format provided in Appendix M.

6.3.3 Role of PERS-00H. Although not intimately involved in study execution, the authority and resources of PERS-00H are available to both divisions and performing activities to facilitate successful study completions.

APPENDIX A

PROBLEM DESCRIPTION AND NEED JUSTIFICATION (PDNJ) FORMAT Manpower, Personnel and Training 6.3 R&D Requirements Document

Note: Limit the PDNJ to no more than three pages.

1. **Title:** Brief Project Title

2. **PDNJ Originator:** Name **Date:**
Organization: Organization (Code)
Phone: () - **DSN:**
Fax: () - **DSN:**

3. **Deficiency:** Describe the current operational deficiency. Discuss the significance of this deficiency; be specific and quantify. Where possible, state the costs of ignoring this deficiency in dollar terms. Costs to consider include:
 - Funds
 - Extra Personnel
 - Accuracy of Work Completed
 - Amount of Work Completed
 - Time to Complete Work
 - System Performance
 - Material Waste
 - Safety/Accidents
 - Equipment Damage

4. **Cause:** Describe the cause of the deficiency. Discuss why R&D is required. Discuss why an operational system cannot be developed immediately. Discuss why a new technology rather than a nonmaterial solution is required to solve the problem. Nonmaterial solutions include changes in doctrine, operational concepts, organization, and tactics.

5. **Desired Outcome:** Describe the desired outcome(s); be specific and quantify.

6. **Customer:** Identify the personnel/organizations directly impacted by this requirement.

7. **Support:** Provide the name, organization, code, and phone for organization(s) who will fund the transition of successful R&D products.

APPENDIX B

TECHNICAL DEVELOPMENT OPTIONS (TDO) FORMAT

Note: Limit the TDO to three pages per option or alternative. Include the PDNJ as an appendix to the TDO.

1. **Title:** From the PDNJ

Program Element: (e.g., PE 0603707N)

Project: (e.g., L1772 - Education & Training)

2. **PDNJ Originator:** Name **Date:**

Organization: Organization (Code)

Phone: () - **DSN:**

Fax: () - **DSN:**

3. **TDO Originator:** Name **Date:**

Organization: Organization (Code)

Phone: () - **DSN:**

Fax: () - **DSN:**

4. **Summary of Alternatives:** Summarize in a brief table or paragraph alternative solutions to the MPT problem defined in the Problem Description and Need Justification (PDNJ). Include estimates of product effectiveness, risk, cost vs benefit analysis, and development time. Alternative solutions should cover the full range of performance capabilities as specified in the PDNJ. Alternatives might provide less costly techniques for achieving the same level of capabilities, or range between expanding existing systems through upgrades to applications of technology that establish new capabilities.

5. **Description of Alternatives:** For each alternative provide a short paragraph which addresses each of the following twelve points. Rough estimates/best professional judgments are acceptable when detailed factual information/data are unavailable.

5.1 Product: New products/methods/procedures/systems you propose to develop.

5.2 Improvement: Predicted performance level or capability.

APPENDIX B—TDO FORMAT

- 5.3 Costs: Estimated total RDT&E cost. Breakdown of costs by FY (year unspecified): FY-1, FY-2, FY-3, etc.
- 5.4 Fit to 6.3 MPT R&D Standards: Briefly address each of the attached six criteria for 6.3 MPT R&D.
- 5.5 Milestones: Outline of milestones (include development, trial and error, pilot testing, product delivery). Breakdown by FY (year unspecified): FY-1, FY-2, FY-3, etc.
- 5.6 Life-Cycle: Rough estimate of life-cycle costs (best guess for procurement, installation, and 5 years of operation, all appropriations).
- 5.7 Test & Evaluation: Significant Test & Evaluation issues.
- 5.8 Logistics: Significant Integrated Logistics Support (ILS) considerations, if any, including maintenance and routine updating.
- 5.9 Coordination: Significant related efforts, including interfacing systems and/or companion developments.
- 5.10 Pros & Cons: Describe the advantages and disadvantages of each alternative. Include pertinent descriptive comments on feasibility and/or desirability.
- 5.11 Cost vs Benefit: If applicable, briefly describe significant trade-offs of cost vs capability (e.g., note any significant points of diminishing returns.)
- 5.12 Dual-Use Technology: Identify potential non-military (i.e, government, non-profit, and or commercial) applications of research products.

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STANDARDS FOR 6.3 MPT R&D (for completion of section 5.4):

To be considered for Manpower, Personnel and Training (MPT) Advanced Technology Development (6.3) funding all technical proposals must explicitly address and satisfy the below six criteria. Proposed efforts should:

1. Involve a technology which has the potential to improve military capabilities, or meet a specific military requirement
 - What is the operational deficiency (in quantitative terms) to be addressed by the effort?
 - Is the deficiency MPT related?
 - What is the significance of this deficiency?
2. Represent a technological opportunity
 - What is the technology that is central to the system under development?
3. Have high payoff associated with moderate to high risk (i.e., success is uncertain)
 - Why is R&D required? Why can't the operational system be developed immediately? Is similar or related R&D work being conducted elsewhere?
 - What are the risks involved in system development (e.g., technological, organizational, operational, financial, environmental impact risks)?
 - What is the uncertainty in system feasibility that is being identified and reduced in the project? For example, does the planned demonstration test technical, organizational, and/or fiscal feasibility? How will this effort reduce the uncertainty?
 - What is the breadth (or specificity) of application of this technology across other Navy, DoD, and/or commercial systems?
 - What are the technical or scientific limitations that must be overcome in order for the development to be successful?
4. Have clear markers—Measures of Effectiveness (MOEs)—indicating whether or not the technology will work and will provide improvements to the operational system
 - What are the MOEs that will indicate whether or not the system is feasible and should be implemented? Have/will MOEs been agreed to by *both* sponsors and researchers?
 - What determines when the 6.3 effort is finished?
5. Provide for testing or evaluation against other system options, including the status quo
 - What are the system alternatives (including status quo) that will be evaluated and compared?
 - Is the evaluation methodology robust? Can an experimental or quasi-experimental design be employed?
6. Have a high probability that transition to full scale development and implementation will follow successful advanced development.
 - If risks are reduced or eliminated, how will the system be implemented? How will full-scale development and implementation be funded? Who will sponsor the implementation?

APPENDIX C

TECHNICAL DEVELOPMENT PLAN (TDP) 6.3 FORMAT

Note: The TDP is a comprehensive description of the aims, significance, approach, and expected product of a proposed R&D effort, providing a yearly work plan and accounting for the fiscal and personnel resources required. It should give sufficient detail to allow critical external review for ensuring both its technical excellence and its responsiveness to the cited operational requirement.

Date of TDP revision _____

1. **TITLE:** *From the PDNJ*
Program Element: *(e.g., PE 0603707N)*

2. **PDNJ ORIGINATOR:** *Name, Organization (Code)*
Orig. Date: _____

Phone: () - **DSN:** _____

Fax: () - **DSN:** _____

3. **RESEARCH LEADER:** *Name, Organization (Code)*
Phone: () - **DSN:** _____

Fax: () - **DSN:** _____

4. **EXECUTIVE SUMMARY:** The executive summary should provide a complete, succinct, and accurate description of the proposed work. It should stand alone and be separable from the rest of the technical plan.

4.1 **Abstract.** Provide a one paragraph summary for each of the following topics: (a) problem/deficiency, (b) technical approach, (c) products and payoff, and (d) potential dual-uses of research products.

4.2 **Budget Summary**

Budget Item	1st Yr \$K	2nd Yr \$K	3rd Yr \$K	4th Yr \$K
In-House Personnel				
Equipment and Maintenance				
Travel				
Miscellaneous				
Contracts/Consultants				
Total Cost				

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- 5. PROJECT DESCRIPTION:** Expand on the Executive Summary and address the issues below. Throughout, demonstrate a comprehensive understanding of both the scientific literature and operational mission needs by ensuring adequate citation of references regarding key points (include a bibliography as Section 11 of this TDP).

5.1 Problem/Deficiency.

- What is the operational deficiency? What are its causal factors? What are the costs of ignoring this deficiency?
- Why is R&D required? What are the major scientific and operational objectives? Why can't an operational system be developed without R&D?

5.2 Technical Approach.

5.2.1 Advanced Technology.

- What is the new technology that is central to the system/process under development?
- What 6.1 (basic research), 6.2 (exploratory R&D) or other prior research contributes to this effort? Is supporting 6.1 or 6.2 work being conducted concurrently for transition to this effort in outyears?
- Is similar or related R&D work being conducted elsewhere (e.g., other service, government, academic, private)?

5.2.2 Military Application.

- What is the prototype testbed (i.e., What is the immediate application or training domain; what is its scope?). Why was this testbed selected over other potential testbeds?
- What is the breadth (or specificity) of potential application of this technology Navy-wide?

5.2.3 Risk.

- What are the technical risks involved and how do they relate to the expected payoff?
- What are the technical objectives? How does this R&D effort reduce risk and test technical, organizational, and/or fiscal feasibility?
- What are the research hypotheses? What is the basis for these hypotheses?

5.2.4 Assessment.

- What is the evaluation approach/methodology (e.g., experimental, quasi-experimental, baseline comparison)? What are the dependent and independent variables? Describe the research design, methods, and procedures to be used to accomplish each specific aim of the proposed research. In general, planned procedures should be demonstrated to be feasible, adequate, appropriate, and as innovative as possible.
- How will measures of effectiveness be determined? Discuss the means by which the data will be collected, analyzed and interpreted.
- What determines when the 6.3 R&D concept feasibility demonstration is completed?

5.3 Products and Payoff.

- What, precisely, are the R&D deliverables (both interim and final) and how do they relate to the original problem/deficiency? How they will be documented?
- Explain how success in this demonstration will produce data, techniques, concepts, products, and/or capabilities for broader application (or generalizability) beyond the particular testbed

selected.

- If implemented, how will/can results of this effort impact on mission effectiveness and affordability? Discuss impacts in quantitative and measureable terms.

5.4 **Dual-Use.** What are potential non-military (i.e., government, non-profit, commercial) applications of research products?

6. **WORK PLAN AND RESOURCES:** Disciplined up-front thought should be given to planning the entire research and development effort from beginning to product delivery. However, since outyear plans are more uncertain than are initial year plans, details of methods, tasks, milestones, personnel, and budgets are required for the first year only. Information on these topics should be provided in general form for the outyears. More finely specified details for the outyears are required six months after project initiation and should follow the guidance provided in this section.

6.1 **WBS Development and Graphic Representation.** A Work Breakdown Structure (WBS) is a hierarchical organization of project tasks and subtasks. Develop a WBS using the four steps outlined below, then for purposes of the TDP document, represent the project WBS as a Gantt Chart that graphically shows the project schedule over time. The Gantt Chart should show start and finish points for included tasks, reveal interdependencies among tasks, and include milestones. The timeline should be scaled to show quarters by fiscal year. Vertical lines should subdivide years and quarters (see Appendix L, page 1 for an example of a Gantt Chart).

- Hierarchically outline the project phases and/or deliverables and show how they are subdivided into tasks. Subdivide until there is a complete outline of what needs to be done to meet the needs described in the PDNJ. The appropriate depth of subdivision in the finest level of analysis will depend upon: (a) the desired degree of oversight by the Implementation Planning Group (IPG), (b) the ability of the research team to monitor the tasks, (c) the importance of the research (i.e., greater importance leads to a more detailed WBS and greater management costs), (d) the degree of uncertainty and risk, (e) the requirements for coordination among elements, and (f) any predetermined division of responsibility among performing agents (e.g., lab/s, SYSCOM, contractor).
- Use the foregoing outline and knowledge of interdependence among tasks to schedule the project. Schedule an initial IPG meeting within the first two months of project funding. Include anticipated contracts in the project schedule.
- Use the outline and schedule to identify project milestones. Milestones are tasks with a duration of zero that are used to measure progress of the project (including the delivery and evaluation of all products specified in section 5.3). Incorporate milestones into the project outline and schedule.
- Staffing and budgeting of the project can be accomplished by associating resources with WBS tasks and iteratively refining the WBS. Note that obligation and expenditure phasing should be planned to FMB targets for each fiscal year. For example, approximately 60% should be obligated and 17% expended by March, 80% should be obligated and 41% expended by July, and 100% should be obligated and 60% expended by September.

6.2 **WBS Narrative.** Describe in paragraph form each project phase, summary task, and milestone

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included in the foregoing Gantt Chart. The narrative should “track” with the WBS Gantt chart. Begin each phase, summary task, and milestone description with estimated start and completion dates. Milestones should be described in sufficient detail so that the research team and the IPG can assess milestone accomplishment and project progress. Projects involving more than one performing activity, including anticipated contracts, should clearly identify organization-specific responsibilities.

- 6.3 Staffing. Use the WBS and schedule to estimate personnel resource requirements of the work unit. Identify individuals assigned to the project and present in table form estimated man-years by fiscal year for in-house, contract, and total work.
- 6.4 Budget. Use the WBS to build a work unit budget.
 - 6.4.1 Report costs for each task of the WBS as well as summary costs to estimate budgets for the work unit and its major components.
 - 6.4.2 Identify anticipated contracts (organization, \$ amount, planned year).
7. **FUNDING ALTERNATIVE:** Discuss the effect of a 20% increase or decrease in funding in the execution year. In the case of an increase to funding, describe how additional funds would be used and what additional milestones would be reached. In the case of funding cuts, list the specific milestones that would slip, and whether personnel reductions would be necessary.
8. **TRANSITION:**
 - 8.1 Transition Plan. New research information, technical capabilities, and prototype products are often not optimally presented or configured as development products for transition to operational forces. Therefore, describe as clearly and realistically as possible the relevant next steps that should be followed, pending successful achievement of your research aims, to proceed along a pathway for eventual research information and product transition to the operational forces.
 - 8.2 Operational Contacts: Describe your contact with specific Naval operational mission or support units that demonstrates your ongoing awareness of operational needs and your ability to be involved in eventual transition, support, and testing of your new research information, technical capability, or developmental product in an operational environment.
 - 8.3 Life Cycle Costs. Provide estimates of life-cycle costs (i.e., procurement, installation, and 5 years of operation, all appropriations) to aid sponsor assessment of cost/benefit and probability of transition.
9. **PERSONNEL AND COORDINATION:**
 - 9.1 Key Personnel. Describe the research expertise and the specific research role of each investigator named in the proposed plan.
 - 9.2 Coordination. Briefly outline the coordination plan for bringing together the various investigators from different disciplines, departments or laboratories. Discuss any formal plans or arrangements that have been made for coordinating the research efforts and ensuring that appropriate time, direction, and research focus is brought to bear on the project over the projected course of the research. Describe the role of any off-site collaborators or contractors.

10. FACILITIES: Describe any special facilities and equipment other than standard laboratory facilities and equipment which are necessary for performing the research. Describe any equipment or facilities that are necessary for the research but unavailable at the in-house laboratory, and plans to meet these needs using facilities and equipment at other laboratories. List all performance sites for the planned research, including collaborations and contracts.

11. BIBLIOGRAPHY.

APPENDIX D

EVALUATION & IMPLEMENTATION PLAN (EIP) FORMAT

Note: Attach Problem Description and Need Justification (PDNJ) and the Technical Development Plan (TDP)

1. Title: From the PDNJ

Program Element: (e.g., PE 0603707N)

Project: (e.g., L1772 - Education & Training)

2. Date of EIP: _____

3. Members of the Implementation Planning Group (persons responsible for the content and execution of this plan):

<u>Name</u>	<u>Organization</u>	<u>Phone</u>
-------------	---------------------	--------------

Chairman, Project Officer

PERS-00H Program Manager

Performing Laboratory Representative

Functional Representative

Implementation Sponsor Representative

Others...

4. Target Dates: Evaluation _____ Implementation _____

5. Evaluation Goals and Objectives:

5.1 Evaluation: Review, and if needed, clearly redefine project objectives.

5.2 Criteria: Define the test and evaluation criteria to indicate project success.

5.3 Decision-Making: Describe how the evaluation results will be used. List the decisions and actions that will result from the evaluation.

6. Evaluation Plan:

6.1 Methods: Describe the test and evaluation events in detail (personnel, groups, measures, activities, schedule, etc).

6.2 Milestones: Describe the schedule of test and evaluation events. Ensure that your plans are consistent with *user* pilot tests and the *laboratory's* technical evaluation. Examples include

availability of funds, hardware procurements, coordination with fleet for use of test sites, software procurement/installation, training, data analysis, and report completion.

- 6.3 Evaluation Resources: List and plan for resources required to conduct the evaluations: funding subjects, equipment, MILCON, hardware, software, test site, management support, training, etc.

7. Implementation Plan:

- 7.1 Users: List product *user* organizations and codes.
- 7.2 Implementation Procedures: Describe how the R&D products are to be used.
- 7.3 Effects: Describe realistically and comprehensively the effects of implementing the R&D product. Where appropriate, include potential costs, potential capability, scope of use (e.g. number of people affected), anticipated quantitative and qualitative effects of implementation.
- 7.4 Milestones: Develop a schedule of events for implementation of the R&D subproducts, and identify the individual accountable for each stage.
- 7.5 Resources: Describe implementation resource requirements (funding, etc.).
- 7.6 Implementation Sponsor(s): Identify the implementation sponsor(s), and list the resources they will contribute.
- 7.7 Transition Support: Describe methods for transition to operational use (e.g., Life Cycle Management, Integrated Logistics Support, training of operational personnel on the new system, etc.).

APPENDIX E

ATD PROPOSAL FORMAT

***Note:** Proposals should be no more than two pages long. Each OPNAV Program Sponsor may forward up to three proposals, in priority order. OPNAV sponsors will be invited to provide representation on the committee which will review these proposals.*

TITLE

- 1. Navy Need:**
- 2. Brief Description:**
- 3. Current Status:**
- 4. Proposed FY- Program:**
- 5. Proposed Program to Transition:**
- 6. Major Milestone:**
- 7. OPNAV Program Sponsor:**
- 8. SYSCOM Project Manager:**
- 9. Transition Plan:**
- 10. Principal Performers:**
- 11. Funding Required:**

PROJECT OFFICER'S GUIDE

APPENDIX F

SAMPLE PROJECT OFFICER APPOINTING LETTER

3900

Ser xxx/xxxxxxxxx

Date

From: Flag-level Project Sponsor

To: Project Officer rank (if military), name, org-code

Subj: DESIGNATION AS R&D PROJECT OFFICER

Ref: (a) Abbreviated Guide to Navy 6.3 R&D Management
(b) MPT R&D Project Officer's Guide

Encl: (1) Project Technical Development Plan

1. You are hereby designated as Project Officer for the Research and Development (R&D) project Program Element, Project Number, Task Title (e.g., PE0603707N, L1772, Classroom Automation). Specific guidance for which you are accountable in the performance of your duties as Project Officer is provided in references (a) and (b). However, in general, you are charged with coordinating with the Program Manager (PERS-00H) to ensure that your project remains responsive to a valid requirement; that the Technical Development Plan (enclosure 1) (attach the project TDP) is current and approved; that your project is on schedule and on track technically and fiscally; and that evaluation and implementation planning, documentation and execution is timely and thorough.

2. This project involves a significant R&D investment directed at a high priority requirement. Hence, you shall be afforded the time, staff and travel resources necessary and appropriate for ensuring the project's efficient and effective execution.

Flag signature

Copy to:
BUPERS (PERS-00H)
Performing R&D Activity

APPENDIX G

6.3 QUARTERLY STATUS REPORT FORMAT

Note: Limit the Status Report to no more than three pages.

1. **Project Title:** From the PDNJ
2. **Program Element/Project/Task:** (e.g., PE 0603707N/L1772 - Education & Training/ETxxx)
3. **Reporting Quarter:** **FY:**
4. **Project 6.3 Funding (\$K).**

	FY-(Start)	FY-(Start+1)	FY-(Start+2)	FY-(Start+3)
4.1 <u>Planned:</u>	\$	\$	\$	\$
4.2 <u>Received:</u>	\$	\$	\$	\$

5. **Management Structure.**
 - 5.1 Project Sponsor(s) (Organization, Code, Point of Contact, Phone #)
 - 5.2 Implementation Sponsor (Organization, Code, Point of Contact, Phone #)
 - 5.3 Project Officer (Organization, Code, Phone #)
 - 5.4 Lab Project Manager (Organization, Code, Phone #)
 - 5.5 Contracting Agency
6. **Documentation Status.** (Give date of sponsor endorsement.)

PDNJ: date TDP: date EIP: date

7. **Project Status.**
 - 7.1 Technical/Schedule.
 - 7.1.1 Specify one: ON TRACK, AT RISK, or CORRECTIVE ACTION NEEDED.
 - 7.1.2 Provide short narrative on status of major TDP and EIP milestones (i.e., progress, products, executability). Describe specific problem(s), if applicable.
 - 7.1.3 Identify changes to TDP, if any.
 - 7.1.4 Identify other accomplishments such as briefings, articles published, etc.
 - 7.2 Fiscal.
 - 7.2.1 Specify one: ON TRACK, AT RISK, or CORRECTIVE ACTION NEEDED.
 - 7.2.2 Report obligation/expenditure rates; comment on cost overruns/excesses or low obligation/expenditure rates.
 - 7.2.3 Identify contract(s) planned and awarded (Organization, \$ Amount, Date, Deliverables).
 - 7.3 Implementation Plan.
 - 7.3.1 Specify one: ON TRACK, AT RISK, or CORRECTIVE ACTION NEEDED.

APPENDIX G—6.3 QUARTERLY STATUS REPORT FORMAT

- 7.3.2 Provide brief narrative regarding IPG status/progress (e.g., Lab/User/Sponsor agreements, payoff potential, transition potential, POM funding).
 - 7.3.3 Address status of EIP mile stones; discuss any changes to EIP (enclose current EIP, if not previously forwarded).
- 8. Recovery Plan.** (Special initiatives for the next quarter to recover technical/schedule/fiscal slippage experienced to date)
- 9. Proposed Deviations.** (Requests for changes to approved project goals, exit criteria, and/or funding to improve/assure executability along with supporting rationale)

APPENDIX H

EXAMPLE MEMORANDUM OF AGREEMENT

MEMORANDUM OF AGREEMENT BETWEEN NMPC, OP-01, AND NPRDC

I. Purpose: Establishment of management procedures to monitor the development and progress of ADP models and systems.

II. Objective: To efficiently and effectively develop models and systems that meet the Navy's needs.

III. Responsibility

A. NPRDC - Technical development of ADP models and systems.

B. NMPC - ADP Management coordination between NPRDC and the OP-01/NMPC user.

C. OP-01B7 - R&D Project Management coordination.

IV. Procedure

A. Initiating the development of an ADP model or system.

1. To initiate an NMPC funded ADP modelling project, NMPC will submit a brief Tasking Letter to NPRDC. The letter should be a coordinated effort of NMPC and the operational user. It will outline the desired capabilities of the model or system.

2. In response to the Tasking Letter, NPRDC will provide a brief Statement of Work (SOW) addressing approach, deliverables, and funding requirements. Where applicable, the SOW will also contain a plan for operational turnover of the model system. The plan will cover implementation strategy, maintenance, and necessary computer resources.

3. R&D funded projects are initiated with a Technical Development Plan (TDP) and Evaluation and Implementation Plan (EIP) describing the nature of the work and implementation requirements, including a plan for operational turnover of the model system.

B. Chief responsibility for the production of Life Cycle Management (LCM) documentation will be vested in NMPC. Technical support, including input to the LCM documentation, will be provided by NPRDC.

C. Prior to the development of ADP models or systems, NMPC, OP-01, and NPRDC will agree on documentation requirements and responsibilities.

1. The degree of coordination and documentation requirements will be jointly established, based on the complexity and size of the development effort, and its origin as an R&D project or O&MN funded reimbursable.

APPENDIX H—EXAMPLE MOA

2. Methods for monitoring the progress of a project will be clearly specified. These methods should be sufficient to keep the user and NMPC well informed, while minimizing the drain on development resources.

D. Requests for developments not embodied in the agreed upon and funded SOW should come to NPRDC in the form of a Tasking Letter, NPRDC will then respond with a letter indicating the resources required and the impact on the existing effort(s).

V. This agreement will continue in effect until cancelled.

appropriate signatures:

APPENDIX I

TECHNICAL DEVELOPMENT PLAN (TDP) 6.5 FORMAT

Note: Append the Problem Description and Need Justification (PDNJ), 6.3 Technical Development Plan (6.3 TDP), and the 6.3 Evaluation and Implementation Plan (EIP) from which this effort transitions.

1. **6.5 Project Title:** _____
2. **Originator:** Name, Organization (Code) **Date:** _____
Phone: () - **DSN:** _____
Fax: () - **DSN:** _____
3. **Research Leader:** Name, Organization (Code) **Date:** _____
Phone: () - **DSN:** _____
Fax: () - **DSN:** _____
4. **6.3 Project Derivative Summary:**
Title: 6.3 Project Title
Project: (e.g., PE 0603707N; L1772 - Education & Training)

Briefly describe the deliverables and technologies that are being transitioned from 6.3 to 6.5.
5. **6.5 Project Overview:** Discuss how the proposed 6.5 effort extends 6.3 MPT R&D products for broader application. Address the following issues:
 - Is the planned R&D less risky than that performed with 6.3 funding (i.e., of moderate to low risk)?
 - Does the proposed work constitute an extension or expansion of that done in 6.3 (in contrast to troubleshooting, debugging, or refining the previous work)? What additional technical or scientific issues must be resolved before the technology can be broadly implemented?
 - Why would O&MN funding (i.e., full system development/implementation) not be appropriate at this point in time? Why is continued R&D required?
6. **Work Breakdown Structure (WBS):** Describe (outline) the major phases, functions, and components of the sub-project. Then identify the parts of each of these activities. Continue to subdivide

until there is a complete outline of what needs to be done to meet the needs described in the PDNJ. The size of elements in the finest level of analysis will depend upon: (a) the desired degree of oversight by the Implementation Planning Group (IPG), (b) the ability of the research team to monitor the elements, (c) the importance of the research (i.e., greater importance leads to more detailed WBS and greater management costs), (d) the degree of uncertainty and risk, (e) the requirements for coordination among elements, and (f) any predetermined division of responsibility.

7. **Schedule:** Use the WBS and knowledge of interdependence among elements to schedule the work unit. The schedule should take into account elements which must be completed before other elements can begin. The work unit schedule may be represented by a Gantt bar chart if the work unit is simple and loosely managed. Complex network scheduling representations (e.g., PERT, CPM) may be appropriate for a complex work unit. The schedule should show interdependencies among elements, estimated start and completion times for each element.
8. **Performance:** Use the schedule and WBS to identify work unit milestones (including sub-project start and completion). Milestones should be spelled out in sufficient detail so that the IPG can track milestone accomplishment and work unit progress. In the event of multiple performing activities, including contracts, clearly identify organization-specific responsibilities.
9. **Staffing:** Use the WBS and schedule to estimate personnel resource requirements of the work unit. Identify point of contact (name, code, telephone number).
10. **Budget:** Use the WBS to build a work unit budget. Report costs for each element of the WBS as well as aggregate costs to estimate budgets for the work unit and its major components. Identify anticipated contracts (organization, \$ amount, planned year).
11. **First Year Alternative:** In the event of reductions to funding, work to be accomplished at reduced funding levels must be defined. Hence, prepare a modified first year WBS and budget which costs-out a minimal, yet viable research effort that supports the EIP.

APPENDIX J

PR-95 CLAIMANT ISSUE PAPER

SERIAL: -
TITLE Navy Training Reservation System DATE May 1993
CLAIMANT Bureau of Naval Personnel SUB-CLAIMANT BUPERS
ORIGINATOR CDR C. Sullivan CODE PERS-22C PHONE xxx-xxxx
RESOURCE SPONSOR N1 PRIORITY
POINT OF CONTACT LT T. Judge CODE PERS-022P PHONE xxx-xxxx
OTHER RESOURCE SPONSORS INVOLVED N7
ISSUE: The Navy must develop a real-time, centralized training reservation system to maximize utilization of training resources.

BACKGROUND: Navy's current reservation system fails to provide timely, accurate data (e.g., class schedules, quotas, and reservations-to-date) because it relies on the faulty integration of antiquated, incomplete ADP systems, developed to support individual organizations. Because of this:

- Navy schools do not know who or how many students are scheduled per class convening,
- BUPERS detailers can't modify orders because they are not aware of class schedule changes,
- scarce training resources are not properly allocated,
- unused quotas are not reallocated; classes are not rescheduled,
- training and personnel resources are wasted.

The proposed system would provide a seamless interface with existing personnel distribution (NMPDS and PRIDE) and training resource management (NITRAS) systems. It would allow detailers to effectively place personnel in essential training. Training commands would have the capability to:

- provide optimum training opportunities to meet fleet needs,
- quickly communicate class schedules changes,
- receive timely and accurate class loading information,
- reallocate unused quotas for maximum use of training assets.

The potential savings of implementation are:

- improved fleet NEC billet manning by reducing Awaiting Instruction/Awaiting Transfer (AI/AT) time, (150,00 man-day reduction (10%) or about \$2.8 million per diem costs),
- reduction in unused training quotas (25% reduction of 92,000 unused quotas) and class cancellations (25% reduction of 1360 cancelled classes),
- reduced training costs per graduate.

CURRENT PROGRAM: The current reservation system (SPIRIT) can only reserve "A" and "C" School seats for USN Active and TAR students. Detailers are not informed of class schedule changes because SPIRIT will not accept the weekly NITRAS updates if any reservations currently exist. Schools usually have no prior knowledge of student bookings before the class convenes. SPIRIT has no way to reallocate quotas among competing customers via a waiting list nor can it forecast "no-shows."

ALTERNATIVE PROGRAM: The alternative system would use an open systems architecture, relational databases, and distributed processing to provide a real-time link to all training users and providers. Detailers, schools and training commands would have on-line access to "A", "C", "F", and "G" School reservations-to-date and remaining quota availability. Reservations would be automatically adjusted and detailers would be notified if a class schedule change occurs. This system could eventually link to sophisticated quota-management models that dynamically reallocate quotas based on demand forecast and the current reservations-to-date for all student types. An acceleration

APPENDIX J—CLAIMANT ISSUE PAPER

of \$200K R&D funding from FY-95 & FY-96 into FY-94 is necessary to complete the detailed design and develop prototype software. The additional O&MN and OPN funds will be used to acquire computers and software.

EVALUATION OF ALTERNATIVES: The current system cannot provide timely, accurate data on class schedules, available quotas, and reservations-to-date, contributing to over 90,000 unused quotas and over 1.5 million man-days AI/AT annually, resulting in unnecessary TEMDUINS costs, and billet gaps/NEC shortages in the fleet. Its antiquated ADP technology incurs high annual maintenance costs of \$1.6 million.

The alternative centralized reservation and quota management system will provide timely, accurate information to all users, reduce AI/AT per diem costs by over \$2.8 million a year, and reallocate unused seats to improve fleet manning by at least 150,000 man-days. The new system will use new ADP technology and reduce annual maintenance costs by \$1.2 million. The \$5.9 million investment for the new system will pay for itself in 18 months by reducing AI/AT per diem and systems maintenance costs.

<u>FUNDING:</u>	<u>FY-94</u>	<u>FY-95</u>	<u>FY-96</u>	<u>FY-97</u>	<u>FY-98</u>	<u>FY-99</u>
<u>CURRENT PROGRAM:</u>						
R&D L1772, PE 0603707N	\$800	\$800	\$800	\$ 0	\$ 0	\$ 0
O&MN	1288	1288	1288	1288	1288	1288
OPN	308	308	308	308	308	308

ALTERNATIVE 1:

<u>TOTAL DELTAS</u>						
R&D L1772, PE 0603707N	\$400	\$(200)	\$(200)	\$ 0	\$ 0	\$ 0
O&MN	0	1650	500	(857)	(857)	(857)
OPN	0	350	300	(308)	(308)	(308)

OFFSETS/ECONOMICS: The new reservation system will replace the SPIRIT reservation system in FY-97. O&MN costs for SPIRIT are \$1.6 million a year. Additionally, per diem costs will be reduced by \$2.8 million, starting in FY-97.

APPENDIX K

EXAMPLE REQUEST FOR 6.6 STUDY/ANALYSIS

1130
Ser 231E/XXXXXXXX

MEMORANDUM FOR THE SPECIAL ASSISTANT FOR RESEARCH MANAGEMENT
(PERS-00H)

Subj: NAVAL RESERVE RECRUITER WORKLOAD MODEL

Ref: (a) CNO (N095) ltr of 6 Apr 93
(b) CNP ltr of 18 May 93

Encl: (1) Naval Reserve Recruiter Workload Model presentation of 20
Apr 93

1. Request PERS-00H perform a study to analyze and validate the progress to date in developing a reserve recruiter workload model.
2. Reference (a) requested support from CNP in developing a recruiter workload model for the Naval Reserve to assist in analytically validating recruiting personnel resources. Reference (b) was CNP's response indicating his support for the proposed project.
3. In an attempt to create a recruiter workload model for reserve programs, N095 brought an officer on ADSW to examine the variables and identify appropriate affiliation relationships that could be useful in substantiating recruiter requirements. Although his efforts were useful, it is necessary to validate the work accomplished as well as to complete a model that could be utilized as a manpower planning tool in order to credibly defend reserve recruiting resources in budget planning.
4. In view of the above discussion, the following specific requirements are submitted:

A. Problem Description. Commander, Navy Recruiting Command has had an operational active duty recruiter workload model for more than two years. The model is particularly beneficial in that it can present in an analytic form the number of recruiters required under various combinations of recruit quality and accessions required. This is important when defending program resources at a time of major force reductions. The Naval Reserve needs such a model to quantitatively analyze and justify its recruiting resource requirements. Naval Reserve Recruiting Command manning authorizations are presently driven by dividing the programmed accession requirements by an arbitrary production per "recruiter" (PPR). (Currently PPR is 23.) The definition of "recruiter" also includes support as well as production personnel. Naval Reserve Recruiting depends heavily on recently separated active Navy

APPENDIX K—REQUEST FOR STUDY/ANALYSIS

personnel. Geographic, occupational, and economic availability of qualified personnel, major factors in the staffing required to meet accession requirements, are ignored in this approach.

B. Products/deliverables required. A thorough and independent evaluation is required for the results of work to date on a reserve recruiting workload model. If the current approach is found to be appropriate, a working prototype of the complete model, with associated documentation, should be delivered, with specifications for any further required development. This model would operate on a desktop computer in a user friendly fashion. A plan for obtaining data required for continued operational use will be provided. If the current approach is valid but a working prototype can't be completed within the scope of study funding, specifications for subsequent development of a working prototype will be delivered. If the current approach is not workable, the study should examine and recommend alternative approaches, with detailed specifications for further work.

C. Mission critical timelines. Results of this study should be delivered to Pers-23 and N095 by 1 Jan 1994.

5. Pers-23 Project Officer/POC will be CDR J.R. Bolton, Pers-231, Phone 614-5550/2.

G. S. MCINCHOK
Director, Recruiting and
Retention Programs Division

APPENDIX L

STUDIES AND ANALYSES TECHNICAL PROPOSAL FORMAT

Note: This document serves as the Performing Activity's proposed Plan of Action and Milestones (POA&M). It will serve as the basis for an agreement between the performer and study user. Limit to no more than 4 pages.

Constraints: To qualify for 6.6 Manpower & Personnel Studies and Analyses funding, the study must be completed within a single fiscal year. It should cost no more than \$100K dollars. No effort or expense is authorized until this plan is approved in writing by Pers-00H.

Date: _____

1. **Title:** Brief Study Title

2. **Study Sponsor:** Name

Organization: Organization, Code

Phone: () - DSN: _____

Fax: () - DSN: _____

3. **Principal Investigator:** Name

Organization: Organization, Code

Phone: () - DSN: _____

Fax: () - DSN: _____

4. **Problem:** Discuss the issue or problem motivating the study.

5. **Objectives:** Discuss the objectives of the study. Provide a description/list of the questions to be answered and/or the application of the product(s) developed by this study.

6. **Technical Approach:**

- Describe a technical approach that covers the full range of deliverables specified in the sponsor's request. List and describe each primary task (with start and completion dates). List and describe milestones (with completion dates).
- Represent the duration of the project's primary tasks and indicate milestones in a Gantt chart that graphically shows the project's schedule. Milestones are represented as points in time at which project progress is assessed. All deliverables (e.g., incremental and final reports, briefings, software, etc.) should be identified and represented as milestones.

Sample Gantt Chart:

0 1 Months 2 3
+-----+-----+-----+-----+-----+-----+

- Task A
- Task B
- Task C
- Milestone 1
- Task D
- Task E
- Milestone 2 (e.g., final brief and report)

X

APPENDIX L—S&A TECHNICAL PROPOSAL FORMAT

x

- c. Describe any assumptions/constraints/limitations made to meet time and/or budget constraints.

7. Cost:

- a. Provide a staffing list, cost projection (i.e., civilian labor & overhead, travel, student aides, contracts, supplies), and investigator manyears required.
- b. Discuss the effect of a 20% reduction in requested funding. Propose an alternative timeframe, level of effort and/or set of deliverables that respond to the requirement.

APPENDIX M

STUDIES & ANALYSES QUARTERLY STATUS REPORT FORMAT

Note: Limit the Status Report to no more than three pages.

1. **Study/Analaysis Title:** (Brief project title)
2. **Funding:** (\$K)
3. **Reporting Quarter:** _____ **FY:** _____
4. **Project Officer:** (Organization, Code, Phone #)
5. **Prin. Investigator:** (Organization, Code, Phone #)
6. **Project Status.**
 - 6.1 Technical/Schedule.
 - 6.1.1 Specify one: ON TRACK, AT RISK, or CORRECTIVE ACTION NEEDED.
 - 6.1.2 Provide short narrative on status of milestones (i.e., progress, products, executability).
Describe specific problem/s, if applicable.
 - 6.1.3 Identify changes to technical plan, if any.
 - 6.1.4 Identify other accomplishments such as briefings, reports, etc.
 - 6.2 Fiscal.
 - 6.2.1 Specify one: ON TRACK, AT RISK, or CORRECTIVE ACTION NEEDED.
 - 6.2.2 Report obligation/expenditure rates; comment on cost overruns/excesses or low obligation/expenditure rates.
 - 6.2.3 Identify contract(s) planned and awarded (Organization, \$ Amount, Date, Deliverables).
7. **Recovery Plan.** (Special initiatives for the next quarter to recover technical/schedule/fiscal slippage experienced to date)
8. **Proposed Deviations.** (Requests for changes to approved study goals, exit criteria, and/or funding to improve/assure executability along with supporting rationale)